Vol. 6. No. 1.

Vick's Illustrated Monthly Magazine.

JANUARY, 1883.

PUBLISHED BY JAMES VICK, ROCHESTER, N.Y.

J. WALTON, DEL. S. GOOLING SC.

Entered at the Post Office. Rochester. N. Y.. as second class mail matter.

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JANUARY, 1883.

HORTICULTURE, as a recreation, has substantial claims that are not sufficiently recognized. Our own pages have borne abundant testimony that tired mothers, and housekeepers turn, with a sense of relief, from the routine of their ordinary duties to the care of their window plants, or their flower gardens. Men who have engaged in employment all through the day will yet find an hour to spend among their favorite plants when they have once acquired a real love of them. The pleasure felt in seeing the beautiful products of the garden, whether fruits, flowers or vegetables, in seeing a plant grow into a handsome form, the result of one's care, and molded and fashioned to some extent by one's skill, is a true recreation to those constantly accustomed to sterner duties. Horticulture, therefore, in its widest sense, in its various phases, may be presented as one of the most positive, most beautiful, most intelligent and refining, and in many ways one of the most beneficial means of recreation, adapted to persons of all ages and all conditions. Especially at this time may we properly call attention to this subject, when, as a nation, we are told by one who is acknowledged to be one of the closest observers, and one of the subtlest thinkers of the age, that our lives are too intense, that "work has become, with many, a passion." The opinions in regard to our people, by HERBERT SPENCER, who came to this country with the express purpose of observing our habits and traits of character, have been widely published, and most of our readers are doubtless familiar with them. And, what is more, most of us acknowledge the truth of his observations, and the wisdom of his advice. He informs us that it is a current remark in England that "when the American travels, his aim is to do the greatest amount of sight-seeing in the shortest time," and he found this observation to be true in regard to our traveling in our own country. Thus, the journeys we undertake, avowedly for pleasure, are made a toil from their commencement to their close. The result of this continuous mental and physical strain he traced in faces, which "told, in strong lines, of the burdens which had to be borne." Moreover, he says, "in every circle I have met men who had themselves suffered from nervous collapse due to stress of business, or named friends who had either killed themselves by over work, or had wasted long periods in endeavors to recover health. I do but echo the opinion of all the observant persons I have spoken to, that immense injury is being done by this high-pressure life—the physique is being undermined." Still, he observes, "Beyond the physical mischief, caused by over work, there is the

further mischief that it destroys what value there would otherwise be in the leisure part of life. Nor do the evils end here. There is the injury to posterity. Damaged constitutions reappear in children, and entail on them far more of ill than great fortunes yield them of good."

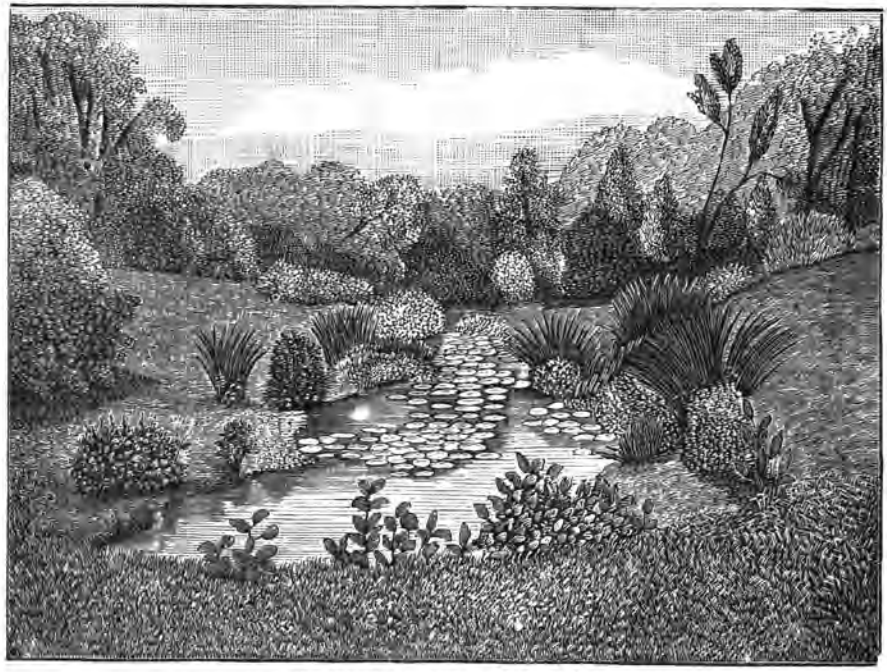
What shall be the remedy for an evil so serious? In a general sense, it must lie in better habits, habits more in accordance with our natural physical demands. It will not be an annual visit to a fashionable watering place, or a popular tour in the manner these are usually made; for these, though capable o affording recreation even in the highest sense, are, as ordinarily made, but other causes for nervous tension and bodily discomfort. We would not discourage these sources of recreation, but rather have them sought for the highest good they can yield. When they bring to us strength of body, and ease of mind, and higher moral impulses, a more philanthropic spirit, then they are positively good. But the correction of wrong life habits is not to be performed in a few days, or weeks, especially not by total discontinuance of those habits for a brief time, and the resuming them. The remedy must be radical and continuous. Happy is that man who has a hobby. The artisan, the merchant, the professional man, or the literateur, who has some pursuit which he engages in merely for the love of it, has a source of rest and strength unknown to him who persistently follows his business course from morning till night, through weeks and months, from the year's commencement until its close. Without, however, enlarging on this point, which is patent to all observers, we wish to present the idea that horticulture is a most benificent means of recreation, and as such can be practised in numberless ways, even by those actively engaged in other pursuits; and our claim is, that those thus interested will not be hindered, but, on the contrary, will be so benefitted by it as to be able better to discharge their ordinary labors and duties. With our opportunities of soil and climate, we should be a nation of gardeners for the love of gardening. By practising this art we may benefit ourselves and our friends, and, if public spirited, we may beautify a village and win remembrance from posterity.

GLOXINIAS.

The Gloxinia was first found in South America, growing in deep, shady ravines on mountain sides. It was named after a botanist by the name of GLOXIN. Many species of it have been discovered in various parts of Brazil, Buenos Ayres and other tropical countries of South America, and in Central America and Mexico. The plants now most highly prized for their beautiful flowers are hybrid varieties. The first hybrid produced was G. speciosa and G. rubra, but afterwards crosses were made with other species, greatly improving the flowers from a florist's point of view. The plant has a tuberous root which can be successively dried off and brought into growth and bloom for several years; it is readily propagated from seeds and also by leaf cuttings. The latter method is employed to increase a particular variety. The most rapid method of increase, is by seed, and it is sure to give at once many beautiful varieties and colors. The seed is very small and should be sown on the surface of the soil without much or any covering. Take a light, fine soil in a pot or pan, with good drainage. The soil may be about three parts fine sifted leaf-mold and one part clean sand; place this in the pot and give it a slight watering, and after it has stood awhile to allow the water to pervade all the soil, press the surface flat and smooth with a small block of wood, and then sow the seed on the surface, and cover with a piece of paper, or cloth, or sprinkle over it, in a fine layer, a little moss that has been quite pulled to pieces. Place the pot in the propagating house or the hot-bed, where a steady temperature of 70°, or over, may be maintained, and where the atmosphere will be constantly humid, and place a bell-glass over the pot. Should the pot at any time indicate by its appearance that moisture is needed, supply it by placing it in a saucer underneath the pot, whence it will rise through the soil. When the little plants have made two leaves they should be pricked out into small pots, in soil composed of one part of clean, sharp sand, one part old mellow stable manure, two parts fine fibrous loam and three parts leaf-mold. The potted plants are now to be replaced in heat, and the plants kept in a growing,

thrifty condition through the season. When the plants have filled the small pots with roots, they can be potted into a larger size. At all times be careful and not over water the plants, or they will be apt to damp off; also, avoid dropping water on the foliage, for this tends to the same result.

Attention must be given to shading, for the foliage is impatient of our hot suns. In the fall, when the heat begins to lessen, give air freely, and ripen the plants off slowly and well. After the leaves have dropped the tubers can be taken up, and placed in dry sand, and stored away until they are wanted to start again. They should be kept in a place not only secure from frost, but where they will have a temperature never lower than 40°; an average of 45° to 50° is to be aimed at while resting. The seed can be sown in February, and through the spring, and plants from the earliest sown seed may produce flowers the first season. As a rule, bloom is not expected until the second season. Toward the latter part of winter, and successively for several weeks, the tubers may be repotted and started to grow, the soil being the same as already described, and the general treatment the same as for the young plants. The tubers should first be placed in small pots, and afterwards shifted into those of larger size, as the roots demand more room. A temperature of 60° to 65° is sufficient when the tubers are first started, but as they break into growth it should be increased to 70°, at least. The plants should be kept near the glass, for their rapid and healthy growth depends greatly upon the light, although, as has been noticed, shade is required from the full sun. Air should be given sufficiently to keep the plants from becoming weak or spindly, and a moist atmosphere must be kept up. When the plants come into bloom they can be removed to the window conservatory, or be taken into the house. At such time they require the air somewhat drier than when growing, but do not attempt an extreme in this respect, for in a dry atmosphere the plants are liable to attack of thrips, which can speedily ruin them.



BOG GARDEN AT CAMBRIDGE, ENGLAND.

The cultivation of these beautiful plants when once understood is not particularly difficult, and it is an easy matter to have in bloom, all through the summer, a stock of them, giving a supply of their showy, handsomely formed flowers.

DOUBLE ACROCLINIUM.

We have been favored with some specimens of a new variety of Acroclinium, which is nothing less than a double form of A. roseum, so favorably known and so much employed by florists and amateur flower raisers. We have no hesitation in saying that it is a little beauty, and will quickly find its way through the gardens of the world. The following account of the origin of this variety by Mr. J. C. SCHMIDT, of Erfurt, Germany, who first discovered the plants with a tendency to become double, and nursed them and propagated from them until he has obtained the result we now chronicle, will be interesting.

DOUBLE ROSE-COLORED ACROCLINIUM.

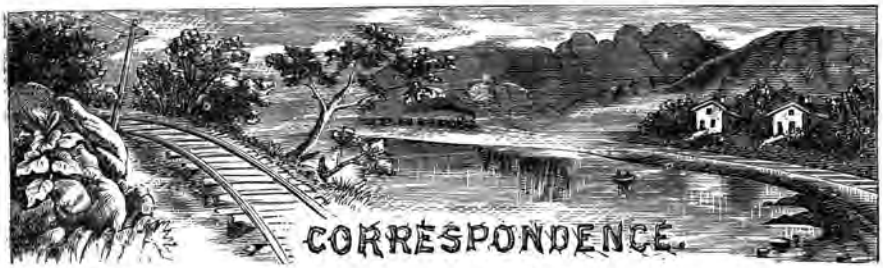
"The single Helipterum, Acroclinium roseum, a native of Texas, was imported into Europe not so very long ago, and immediately gained the favor of nearly every one who saw it. Especially the bouquetists and wreath-makers found it to be a very good addition, and used the little pink-colored flowers freely to fill baskets, arrange bouquets and for general flower work. Six years since I discovered amongst the Acrocliniums which I cultivated on a space of ten to twelve acres a few plants, the flowers of which showed a slight inclination to become double. These few plants I picked out, and with the greatest care I selected again and again the proper plants, so as to obtain a double flower.

"I have now succeeded in getting this novelty nearly constant. Only about twenty-five per cent. of the seeds sown last harvest from good double flowers, turned out single flowers. After a period of six years' unceasing care, I offer my new Acroclinium roseum flore-pleno as a very valuable addition to the class of everlasting flowers.

"The single Acroclinium being a very favorite flower, without which the composition of flower-work cannot be effected, the new Acroclinium roseum flore-pleno will doubtless obtain still more favor from consumers, as in the case of the forms of Helichrysums and Xeranthemums, of which flowers the double varieties are always preferred to the single ones.

"The demand for material to make wreaths and bouquets of dried flowers is increasing from year to year, and every good novelty in this department is generally accepted with great satisfaction."

It may be added that this new variety has the general habit of growth of the single ones, and produces its flowers as freely. According to the above description about one-quarter of the flowers are single, being just such as we have always raised, and, of course, as valuable; in fact, most people will probably prefer a portion of the flowers to be single ones, thus affording greater variety.



BLOSSOMS BENEATH THE SOD.

I.

There are pale, sweet blossoms beneath the sod,
That will not bloom till May,
And I long for the first warm blush of spring,
And the merry swallow upon the wing,
And to hear the first wild robin sing
In the Maples, over the way;
But faded blossoms of Golden-rod
Bend over the blossoms beneath the sod.

II.

Oh, the violets waken between the showers,
Like the blue of the April skies,
And the road-side blooms into clover white,
While the Buttercups, shy, spring up in a night,
And the meadow glows with the golden light
Of the Daisies' honest eyes;
I'm weary, so weary of Golden rod,
I long for the blossoms beneath the sod.

III.

long for the buds on the Maple trees,
And the green on the Lilac bough,
And the hedge rows sweet with the Rose's breath,
With early Snow-drops hiding beneath,
And the wild Sweet-Fern and the Cypress wreath,
Where the dry leaves rustle now;
And to see the tall, sweet Lilies nod,
Oh, the pure white Lilies beneath the sod.

IV.

And I long for the friends of my childhood days,
That are gone, like the early flowers;
Though the friends around me are true and rare,
Yet I long for those who are never there,—
There's a fragrance flown and a hush on the air,
And a sigh on the happiest hours;
I long for the Lilies that bloom with God,
The pale, sweet blossoms beneath the sod.

—Olive M. Cooley.

ROSES IN MAINE.

Last spring, when I bought my Rose bushes, I said I would let you know how I succeeded with them. It was so dry that my plants suffered for water in my sandy soil; still I am satisfied with the results. I bought one hundred Teas and sixty hardy Rose bushes. Of the hardy bushes one cannot form an opinion the first year they are set out, but some of them did very well. Antoine Mouton gave fifteen blooms, but the color is not clear enough to suit me, it is a little muddy. Alfred Colomb gave eleven perfect blooms, of good color and form; as far as my experience goes this is the dark Rose. Mad. Chas. Wood gave sixteen blossoms, but not equal in size or form to A. Colomb. Of the Hybrid Noisette class, Coquette des Alps and Mme. Auguste Perrin did best. Perhaps, next year, I can give a better account of my bed of hardy Roses; nearly all bore a few flowers, but generally imperfect ones, which I laid to the drouth and size of bushes; but Fisher Holmes and Marie Baumann were exceptions, they being very fine, but few in number. Baroness Rothschild is a pretty pink color, but the blooms I secured were nearly single. I kept a record of each bush, and so judge a Rose by the number of blooms as well as by the size and shape. Of the Teas, Bourbons, &c., I will name fifteen that did the best with me. All of these gave twenty-five blossoms or over, and are the cream of Roses for my garden, Duchess of Edinburgh, Coquette de Lyon, Douglass, Safrano, Bon Silene, Adam, Duchess de Brabant Madame Bravy, Charles Rovoli, Marie Van Houtte, Queen of Bedders, (for expanded state,) Mad. Joseph Schwartz, Appoline, Hermosa, Isabella Sprunt. None of these are pure white, as I had no white Rose that gave over seventeen blooms; the one giving this number being white Tea, but it is far from being my choice among white Roses. Marie Guillot with ten to her credit, or Sombreuil with nine, are far preferable. Niphetos is the most lovely, but is a poor bearer in the open ground. The prettiest Roses of my choice, size, color, fragrance and form combined, are in the order named, Catharine Mermet, Niphetos, Marechal Niel, Rubens, Duchess of Edinburgh, Malmaison, Madam Bravy and

Marie Guillot; Mad. Welche among Teas. I will also give you a list of roses that, in my soil, are not worth growing, American Banner, Madame Camille, Mad. Capucine, Innocente Pirola, Abbe Roustan and Beau Carmine. This last is a free bloomer, but never has a perfect flower, one side would be green and not open at all. Other roses that are highly praised, but did not do well with me, are Perle des Jardins, Letty Coles and Madame Lambard; I shall try these again next year. Among the Hybrid Teas, La France, Michael Saunders, Viscountess Falmouth and Pierre Guillot did best. None of my Moss Roses bloomed, but the Polyantha, Roses Annie Marie de Montravel and Mme. Cecile Brunner, both did splendidly, and especially the latter, which is very pretty. I am trying about a dozen Roses in the house this winter, but as it is my first attempt, I do not expect much of them. Geraniums are my stand-bys for winter plants, they are free from insects, and so sure to bloom and do well. I hope to have a better report for my hardy Roses next autumn.—L. R. C., *Yarmouth, Maine.*

THREE SWEET CRAB APPLES.

Pringle Sweet.—This variety originated with C. G. PRINGLE, the well known hybridizer and originator of the Snowflake Potato, &c., of Charlotte, Vt. The tree is a strong, erect grower, with light yellow bark; an abundant bearer even when quite young, and is perfectly "iron-clad" against cold. The fruit is round, very uniform in size, about two inches in diameter, dark yellow, with more or less of rich crimson striping. The flavor is very sweet, and this Crab makes the richest cider of any variety I know. There is a very slight astringency and bitterness observable in the raw fruit. This disappears in baking, and the baked fruit is astonishingly rich in flavor; flesh yellow. The season of this variety is September.

Van Wyck Sweet.—This fine Crab originated at Fishkill, on the Hudson. It is of about the same size and form as the Pringle, but more delicate in coloring, and entirely free from bitterness and astringency, thus being a good Apple for eating in the raw state. The flesh is white and rather firm, and the sweetness delicate and pure. The tree is a slim, erect grower and a good bearer, not strictly "iron-clad," but standing about with the Red Astrachan, or Tolman Sweet, in hardiness. Its season is September.

Beach's Sweet.—This variety was received by me from Lake City, Minnesota. The tree is rather spreading, an early and free bearer and a good grower. The fruit is round, perhaps a little larger than either of the above, and in color not widely differing from Van Wyck, but less delicate, and without mottling. The flesh is white, not so fine in texture or quality as Van Wyck, yet still quite free from crabbiness, and very good. It is the best keeper of the three, remaining sound until the middle of the winter. The tree is entirely hardy in the coldest spots.

These three sweet Crabs are the most valuable kinds out of some dozen or more that I have tested. As Crabs are specially desired in the coldest localities only, it is a great pity that Van Wyck, the best of the three in quality, does not prove quite "iron-clad." But Pringle, for cooking and cider, and Beach for eating and keeping, can be grown in the hardest spots, and I heartily recommend them. They are of large size for their class, ranking with "small" Apples.—T. H. HOSKINS, M. D., *Newport, Vt.*

A BIRTHDAY VINE.

I have just been serving as an "applaudient spectator" at the planting of a Grape vine on his birthday, in November, by a twelve year old grandson, who greatly desired to have a good white Grape of his own. All young readers of the MAGAZINE whose parents can give them the necessary soil room, and whose birthdays occur between October first and April last, might well imitate this example, planting, if they prefer, a tree, or berry bush, or a shrub or perennial flower. And those born during the growing months need not, by any means, suppose themselves debarred from such an excellent procedure, but can very well select on their summer birthday what they will plant, and then set it out when the time comes. The writer made a journey of considerable length a few years ago to see a tree which had been planted in his name in a row of similar ones, Maples, over forty years before, to commemorate a joyous festival. It was a delight merely to see it.—W., *Tyrone, Pa.*

THE FIG AT THE NORTH.

The Fig can be cultivated in the Northern States, but it must have a little protection during the winter months. Few people know what a luxury they miss by the absence of the Fig tree from their premises. Almost every one has Grape vines, why not Figs? The only little extra trouble they give is their winter protection. A situation with a southern or eastern aspect is suitable for them, especially when they are planted against a brick or stone wall, or even against a building. The warmer the corner, of course, the better for ripening the fruit. In fact, almost any situation adapted to the Grape will suit the Fig, provided it is sheltered from the north. I have some under my charge that are now five yards high; they are planted on the south and east side of a greenhouse. This location may possibly be peculiarly well adapted to them for the reasons that, in the first place their roots can run under the greenhouse without restriction, and, I suppose, they do, although I have not made examinations to ascertain to what extent they occupy this space; but they have a large and good border outside. Again, they receive some reflected heat from the glass, and also, as the lower ventilators of the greenhouse are open, more or less, nearly all the time during spring and summer, they receive considerable warm air from the interior. But, as I have previously stated, a good wall will be found well adapted to the successful culture of this fruit. Almost any common garden soil is suitable for it. Abundant moisture is indispensable in the growing season, and if the weather in the early part of summer should be dry, attention must be given to watering.

THE BLACK ISCHIA FIG — THREE QUARTERS NATURAL SIZE.

As the stem or trunk of the Fig tree is almost as limber as a Grape vine, it is easily bent down so as to be covered for winter. About the middle of November, when the frost has cut off all the leaves, I take the branches and tie them close up to the body of the tree, like a bundle of sticks, and then bend down the tree as near to the ground as possible. The trees that were put down last fall were eleven inches in circumference and about fifteen feet high, and they were easily bent within eighteen inches of the ground. One seeing them only in the summer could scarcely be made to believe that with all their spread of branches, they could be packed away in so small a compass for their winter quarters. When the trees are bent down they are securely fastened in place by being tied to a few stakes driven into the ground; then they are covered with boards, upon which is placed a layer of straw, and after this, a

layer of soil. Any one who has covered a pit of Potatoes would know how to cover Fig trees for winter. The covering is allowed to remain until the middle of May, or about that time, according to the state of the weather.

Many visitors who saw my Fig trees, the last summer, were surprised at the size of the foliage, and the luxuriant growth, and, above all, the wonderful crop of fruit. "Why," many would say, "I thought that Figs only grew down South, or in some other warmer climate." Some who saw the trees and tasted the fruit when ripe, which was in October, said they would surely raise them in their gardens. The variety I have is the Black Ischia.

I have seen it recommended to plant the Fig trees out in the garden, and remove them in the fall with a good ball of earth, and place them in the cellar, secure from frost during winter, and plant them out again in the spring; I have had no experience with this method, and cannot, therefore, say anything in regard to its merits.—R. G., *Rochester, N. Y.*

INSECT INFESTED PLANTS.

In a former article I promised to tell how I treated plants infested with insects; but to begin with, I will say "an ounce of prevention is worth more than a pound of cure."

In the autumn, before my plants are arranged in the windows, I always give them a good smoking, and I will give my method of doing it. I have a large, low closet, without shelves, in a back room, and into this I pack as many plants as I can at a time, closely together, leaving a vacant space of about twenty inches square in the center. On this I place two bricks, and on them lay a piece of iron previously heated red hot in the kitchen range: then I sprinkle a handful of finely cut and slightly dampened tobacco on it, and close the door as quickly as possible. I let the plants remain for twenty minutes or half an hour, but not longer, for the smoke stupifies the aphides or plant lice, and they fall to the earth, but revive after an hour, so the plants should be taken out in about a half that time, nicely sprinkled, and the earth at the top of the pot rinsed off, if any insects are seen upon it, and when pot and plant are clean they can be placed in their winter quarters. Such plants as are especially liable to be troubled with these insects, such as Pelargoniums, Cinerarias, scented leaved Geraniums, &c., I give two or three smokings, one day intervening between them. I also treat every new plant I obtain in this way, whether from friend or florist. Some will ask, "What if you see no insects?" Yes, I treat all of them to the "ounce of prevention." When there are insects upon any I do not consider one smoking sufficient, because I have had them reappear in a few days, but if they get two, or, as is sometimes the case, three, I seldom have to repeat it. Sometimes you will see them on plants which have not thorough drainage, and whose roots are in an unhealthy, sodden condition. In that case the plants, after smoking, should have the decayed roots cut away and be repotted. If the pot was a hard baked, unhealthy one, so the surplus moisture could not pass off, give a fresh, new one, with plenty of broken crockery or charcoal at the bottom, and place, after a day or two, in a sunny window, and the insects will not be likely to trouble it again. Some will say, this is taking a great deal of pains, but what really good, desirable thing can we have in this world without some pains-taking? And this trouble I have all at the beginning is the "ounce of prevention," and my plants are free from the aphis all the rest of the season, for I seldom need repeat it.

The red spider is often a source of great trouble to plant growers, and it will succumb to nothing but moisture. It loves a hot, dry atmosphere, such as is found in our sitting rooms and parlors, and I have seen them on the windows and in the casements, seeming to "lie in wait" for our window pets. I am always careful that plants do not touch the window, for I think sometimes plants become infested in this way. The spiders are so minute that many a plant is ruined before the housewife detects the danger. When plants are badly infested it is best to throw them away, but if only a few are seen, they may be eradicated by constant washing or syringing the leaves, and this is the only way to keep them in check. Ixias, Carnations, Azaleas, Genistas and some others seem particularly subject to their ravages, and should be sprinkled or drenched once or twice a week. I would

recommend a weekly sprinkling for all plants, but when one has a hundred or more to care for it is not always convenient to do this, so those most liable to attacks from the spider must be attended to, while the others await a convenient opportunity. Frequent sprinkling is of great importance, yet there are some plants whose leaves should never be wet, such as those with downy leaves, like Gesnerias, Primulas, Rex Begonias, &c., but a soft brush should be used occasionally to remove the dust.

The scale insect is often troublesome on hard wooded plants, like Ivies, Oleanders, &c. These can be destroyed by washing them off with strong carbolic soap suds, and repeat in a few days. The mealy bug must be picked off by hand or with a pin. I never had but one plant infested with it, but after picking off and frequent washings with carbolic soap suds they troubled me no more.

Never keep an insect infested plant with your clean, healthy ones, but give them "medical treatment" at once, and put them in good condition before placing them with the rest of your window pets.—MAY MACKENZIE.

FICUS ELASTICA.

The India Rubber Tree is one of the best plants for house culture. Its native place is India, where it grows to an enormous size and ranks among the tallest trees of that country. In house culture a plant of this kind reaching the ceiling is a novel and much admired sight. The milk white sap, which flows from the stem when tapped, furnishes the raw material called coutchouc, for the manufacture of rubber; and the elastic property of the substance is indicated in the specific name of the plant. Many have probably heard and read about the botanical gardens in Ceylon. The roads entering the grounds are lined on both sides with rows of these tall, majestic trees, each having a crown of several thousand leaves growing on branches sometimes forty feet long. Many of the branches bend to the ground, where they take root again, thus covering a large area with shade. In a country like India, under a tropical sun, such a tree presents a grateful shelter. Whole families are found living under these trees during the hot season. The spread of the roots is also very great, often being from one hundred to one hundred and fifty feet. Few people would think that the plant we raise in our rooms and greenhouses could develop itself to such a magnificent tree in a climate suitable for it.

There are few objects in nature more beautiful than this plant when well grown. It has become very popular, not only in the hot-house, but also as a decorative plant for the parlor and even for the flower garden. It flourishes even in the open air during the summer, and

also makes a good growth during the winter months in the living room, doing perfectly well there in an atmosphere often too dry for human beings. Thus, even those who have no plant house are not debarred from the enjoyment of this fine leaved plant. The leaves are of the deepest and richest shade of green, and are about four inches in width by ten or twelve inches in length, and have a tough, leathery texture, with a bright and glossy surface. The plant is of vigorous growth, and easily propagated by cuttings. Loam well mixed with a little rotten manure and sand will secure a good growth.

During warm weather the plant may be set out in the ground, or remain in the pot sunk in the soil. It should be repotted early in the autumn, before removal to the house.—C. M., *Rochester, N. Y.*

ANDERSON'S VERONICA.

The various species and varieties of Veronica form a very distinct and beautiful class of bedding and greenhouse plants, blooming, as they do, during the autumn and winter months, when all flowers, even those of little beauty, are highly prized. One of the prettiest and most distinct is V. Andersonii, a garden hybrid between the willow leaved, V.

VERONICA ANDERSONII—HALF NATURAL SIZE.

salicifolia, and the Napuka or showy, V. speciosa. This beautiful Veronica belongs to the natural order Scrophulariaceæ, and is a greenhouse shrub, growing from one to three feet in height, of branching, compact habit, with opposite, glossy green leaves; it produces its pretty blue flowers in axillary racemes, each raceme being over three inches in length. It is a plant very suitable for the greenhouse as well as for the window garden, requiring but little skill for its successful cultivation, thriving well and flowering freely in light, loamy soil, if given a winter temperature of from 45 to to 50 degrees. It prefers to have the pot well drained, and to be watered freely at all times. Do not over pot the plant, and keep the foliage free from dust by sprinkling or syringing it occasionally. Give it a light, sunny situation, if possible.

It is also an excellent bedding plant if given a rich, deep, loamy soil, a sunny situation with a liberal supply of water during our hot, dry summer season; while single specimens in the mixed border are very attractive. Propagation is effected by cuttings of the young wood, and the young plants, if liberally treated, will soon make fine flowering specimens. But the plants, if required for bedding purposes, should be struck from cuttings as early in the season as possible.

The only insects to which the Veronica is subject are the greenfly and red spider. A slight fumigation of tobacco will destroy the former, and a free use of the syringe, the latter.

PAXTON, in his work entitled *The Flower Garden*, gives the following interesting account of its origin: "It occurred to a very intelligent gentleman, named ANDERSON, residing at Marysfield, near Edinburgh, who has long occupied himself with questions of hybridization, that the two plants would probably cross. He, therefore, powdered the stigmas of V. salicifolia with the pollen of V. speciosa, from which sprang a most extraordinary race, now called V. Andersonii. The leaves of the mule are broader than those of V. salicifolia, and thinner than those of V. speciosa, while the manner of growth and form of the tufts of the flowers is exactly intermediate, and stranger still, each tuft is parti-colored, white at the bottom, like the willow leaved, and rich blue at the top, like the Napuka."—C. E. PARNELL, *Queens, L. I.*

BUSH MORNING GLORY.—I have Ipomœa leptophylla grown from seed and now six or seven years old. It is perfectly hardy, has made quite large roots, and grows luxuriantly, but so far has shown no signs of blossoming. How long must we wait for it? VICK'S MONTHLY, Vol. 4, page 359, says, "This is apparently a very interesting plant, and we shall endeavor to raise and test it here." I therefore venture to give my experience with it to date.—T. H. H., M. D., *Newport, Vt.*

ROSE GOSSIP.

At this writing, November 20th, although the days are bright and beautiful, yet the frosts at night are very severe, and the hard frozen ground reminds us that it is high time to prepare our Roses for their winter's rest. Here, in our semi-arctic climate, the most rigorous winters prove more favorable to the constitutional well being of our Roses than the milder ones. This is a paradoxical assertion, yet I shall persist in making it, fortified as I am by the deplorable experience of the winter of 1881-82. Though a winter of exceptional mildness, yet it made sad havoc with my finest Hybrid Remontants, killing outright about forty varieties. The lack of snow in sufficient quantity to cover them, of course, explains the matter.

I am now trying an experiment, new to me, in the way of winter protection. Having bent the Rose plants to the ground and placed a stick or two of wood on each to keep them in place, have covered them with flat branches of evergreens. They look so easy and comfortable in these quarters that I feel great confidence in the ultimate success of the experiment. Should the result prove favorable I shall duly report. I have also used the same material for Strawberries, Grapes and biennials, such as Campanula media, Foxglove and Hollyhocks, which often succumb in mild winters with us.

To amateurs who grow Roses under glass it may be well to say, that good authority can be given for the statement that Marechal Niel produces flowers nearly double the usual size when budded on Gloire de Dijon.

The Marechal's supremacy as the deepest yellow Rose is to be contested by a coming novelty, called Madame Eugenie Verdier, raised by ANTOINE LEVET. This Rose has attracted much attention on account of its deep yellow color, with a still deeper yellow center. The form is very elegant, and the buds of exceptional beauty. It is a seedling from Gloire de Dijon.

The Perpetual Moss, Blanche Moreau, sent out two years ago, has appeared to great advantage the past season, both at French and English shows. It will, doubtless, become a standard sort, and will supersede that old white humbug, Perpetual White. Speaking of Mosses, gives an opportunity to say that every body should have at least two, and that it would be extremely difficult to find finer or more exquisite flowers than those produced by the varieties, gracilis and cristata, though quite distinct yet both are, in different styles, equally beautiful.

The introduction of PERNET's wonder-Hybrid Remontant, Merveille de Lyon, is the leading event in French Rose circles. The testimony in its favor is diverse and universal, even rival establishments speak in glowing terms of its rare beauty. M. PAUL LOSIER, a nurseryman of Dijon, who visited M. PERNET's grounds, and there saw several thousand plants of this variety in bloom, says that it surpasses in beauty all the sorts hitherto grown, and lest his testimony might appear exaggerated, he adds that he was accompanied by several leading rosarians of wide experience, who were all equally enthusiastic in its praise. M. LOSIER also saw this Rose at the Chalons exhibition, where, amongst five hundred varieties, it stood peerless and unapproachable in marvelous loveliness.

M. LIABAUD, a rosarian, who has sent out a few flowers of great merit, such as Jean Liabaud and Baron de Bonstetten, writes to the editor of the *Lyon Horticole* that "PERNET's new Rose is a flower of extraordinary beauty, and that its advent cannot fail to create a great sensation."

In foliage and general appearance it resembles the parent plant, Baroness Rothschild, but the flower, pure white, is much larger, fuller and more perfect in form. The universal desire so long felt for a true Perpetual White Rose, of large size, elegant shape and hardy habit, is now, in all probability, met by PERNET's phenomenal seedling. To be absolutely perfect it lacks but one quality, that of fragrance.

It is to be feared that several of the French growers are over-doing the business this year. VIGNERON comes out with the extraordinary number of eleven new seedling Hybrid Remontants. Three of these are seedlings from Elizabeth Vigneron, all light rose in color. EUGENE VERDIER FILS offers six Hybrid Remontants, one of these, Madamoiselle Marie Closon, would seem to be a fine light rose. It is described as being from medium to large in size, very full, good

shape, and of a fresh, delicate shade of rose, bordered white. It is a true Perpetual, extremely fragrant, and floriferous. The others are, Admiral Seymour, deep, purplish red, with velvety shadings; Antoine Chantin, deep cherry red, with light border; Baron Wolseley, bright crimson, with velvety, fire red shadings; Lecocq-Dumesnil, dazzling red, marbled and shaded with crimson brown and purple; Madame Lelievre-Delaplace, red, shaded and bordered white.

One of my special favorites is an old Provence Rose, not to be met with in every garden. It came into my possession several years ago, at the epoch when the Rose mania, which has now assumed a chronic form, first attacked me. I have this fine old Rose budded on Manetti, and have it also on its own roots. In either condition it never fails to yield a generous supply of lovely, semi-double, cup-shaped, cream-white flowers. The buds are very fine, and the sepals are so delicately and beautifully cut that it must have served as model for those lovely French artificial flowers we now so often see.

Charles Lawson is a grand Rose, and to my thinking not sufficiently commended in the catalogues, while many undeserving subjects are praised without stint. On Manetti it is a strong, rampant grower, giving glorious flowers of the most prodigal fullness, and beautiful proportions. It succumbs to the blandishments of layering quite readily, and as I have a few specimens so treated, I shall be able to speak of its behavior on its own roots another season. It is a Hybrid China.

A very remarkable specimen of La France, grown in pot, was shown at the Champs Elysee's exhibition, in May last. The plant was covered with two hundred flowers and buds, and was sold on the ground for $40. The exhibitors, LEVEQUE ET FILS, also displayed eighteen hundred Roses in pots, and two hundred and fifteen varieties of cut flowers. At an English show a pot grown plant of the Noisette, Celine Forestier, contained two hundred and fifty beautiful, fresh, fully opened Roses.

To state the matter in very mild terms, several of our Rose dealers are culpably careless in labeling their stock, and often cause disappointments so provoking that only those who in early youth have received the benefit of a solid Christian education can successfully and with equanimity endure the ordeal when finding themselves victims of this unpardonable negligence. For instance, a few years ago I ordered and duly received four Moss Roses, labeled respectively Henri Martin, Luxembourg, Hortense Vernet and James Veitch. After waiting with heroic patience for the space of two years for the coveted flowers, I made the agreeable discovery that my old friend, Gen. Washington, had, in a very undignified manner, been masquerading as James Veitch, and that the three first mentioned Roses were all vigorous Luxembourgs. Here the curtain falls.—F. LANCE.

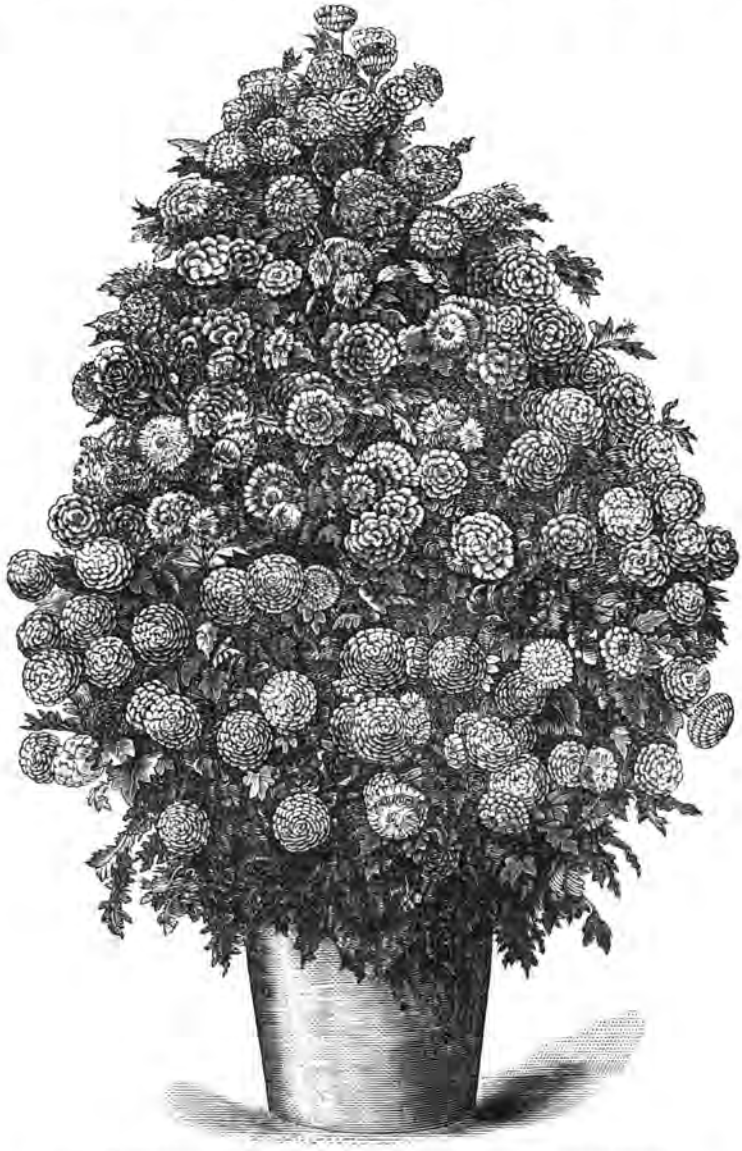
WATERING PLANTS.

I am not unfrequently asked by friends who are interested in house plants to prescribe a remedy for the ill condition of their largest plants, which give them much trouble, very often attributed to some defect of the soil in which they are planted. But in nearly every case examination reveals the fact that insufficient watering is the cause of the non-thrift of of such plants. On turning them out of the pots or tubs in which they are planted, the the lower half, or two-thirds of the ball of earth, is found to be as dry as dust, and the roots in great part dead.

The difficulty in the first place is, that the pots and tubs are made too full of earth, so that a sufficient watering cannot be given at once, and, therefore, hardly ever given at all. There ought always to be at least two inches of space left between the surface of the soil and the top of the pot or tub. This space two-thirds filled with water is required to saturate the earth when dry, or nearly so, if eight to twelve inches deep. It were better to have it three inches for all strong growing plants, so that when in vigorous growth their roots may be reached and supplied with one watering. The same plant at rest, of course, requires less water, or at least less frequent watering. The matter here referred to seems to me to be very much overlooked. I seldom, if ever, have seen it alluded to in horticultural publications.—T. H. H., M. D., *Orleans Co., Vt.*

CHRYSANTHEMUMS.

There are some flowers we admire, but never conceived any strong affection for. The Camellia is one of these. It is exceedingly beautiful. I know of no more beautiful sight than a room in the greenhouse filled with blossoming, well grown specimens of Camellias. We look at them, say "exquisite," and "magnificent," admire the great waxen-petaled flowers, and go on to some other room where, before an humble flower, we feel as if we had suddenly come upon a friend, and we find ourselves talking with it in a wordless way, and often we touch it in caressing fashion, as if meeting friends clasped hands. Flowers are like persons. Some are made to be looked at and admired for their beauty, others to be loved for some quality in them which makes



MODEL SPECIMEN OF POMPON CHRYSANTHEMUM. FROM A PHOTOGRAPH.

them akin to us. We may but half understand, or not understand at all, what that quality is, but we feel that it is there, and it gives us a sense of friendship with them.

One of these companionable flowers is the Chrysanthemum. It is essentially a household flower. Go where you will you will come upon it. Growing in old boxes, in broken pots, in tin cans, and cracked butter jars, as we oftenest see it, for many of those who own Chrysanthemums cannot afford to give their pets good pots to grow in, it adapts itself cheerfully to circumstances, and, like Mark Tapley, "comes out strong" when most plants would not "come out at all." It is such a sturdy, "I'll-get-along-someway, thank-you," sort of a plant that it wins the respect of everybody, and teaches us a lesson of making the best of things, if we would only heed it.

A box or pot of Chrysanthemums in full bloom is a sight worth seeing. Every branch will be loaded down with flowers, and no matter how small some of the flowers may be, all will be perfect. From one plant you may gather clusters suitable for a large vase, and others small enough for my lady's hair. And one of the chief merits of the plant is, it always comes into bloom at a season when we have but few flowers, and is a beautiful sight for weeks. We have no flower so much to be relied on for holiday use as the Chrysanthemum. From the first of November to the middle of January we can have it in full splendor, if we manage the plants rightly. By pinching out the early buds on some, the blooming period can be kept back, and thus we can have plants come into bloom all along through the late fall and early winter months. After the flowers have faded I always cut down my plants, leaving no top at all. I put the pots in the cellar, and leave them there until spring. When it is warm enough to warrant doing so I bring up the pots and put them on the veranda. There will soon be young shoots starting up all over the surface of the pot. Nearly every one of these can be cut away from the old plant, with roots attached, and from one pot of Chrysanthemums you can often obtain a dozen or twenty new plants. If I want plants for use in the house next fall, I prefer to grow them all summer in pots. I have them under better control in that way. I put new plants in small pots of rich soil, and shift to large pots as the roots fill the ball of earth they are growing in. By giving them plenty of room and a rich soil to grow in you can have plants three feet high, and as many feet across, and one such plant will give you hundreds of blossoms. You can make little shrubs of them by pinching back the branches, or you can have little trees of them by keeping them to a straight stem until two feet high and then pinching out the top. Branches will start at once. When these grow six or eight inches pinch the ends out and encourage new branches to grow.

By keeping up this pinching process you will soon have a fine top on your Chrysanthemums. They need a great deal of water, and nothing damages them so much as to neglect them in this respect after the buds have begun to grow.

As the Chrysanthemum is able to brave hard frosts it is our most valuable fall flower. The garden beds may be made gay for weeks with it. So many plants may be obtained from an old root that any one owning one may easily fill a bed and have enough left for use in pots or boxes. A great many persons cut back their plants after blooming, and the next spring allow all the new shoots to grow. This never gives such fine, vigorous plants as we can have by starting new ones, and keeping down the suckers which will be sure to start.

We have such a variety to select from that all tastes can be satisfied. The colors range through rich reds and maroons to pure white, pale and vivid yellow and pink. Those who like smaller plants with very double flowers, whose regularity of petal is almost equal to that of the Dahlia, can get the pompon or dwarf varieties, while those liking a larger plant, with larger flowers can use the Chinese kinds. I like these best because they have such a jolly, free-and-easy air about them. They always seem to be going in for a "good time," and forget all about being prim and dignified. They haven't any "company manners," and you always feel at home with them. But all are lovable flowers, and you will be sure to like them. You can't help doing so.—EBEN E. REXFORD, *Shiocton, Wisconsin.*

HARVEST FESTIVAL.

The following description of an English church, decorated for a harvest festival, is vivid, and at the same time so suggestive it will be read with interest by many. It is given by a "Spectator," and relates to the grand old church of St. John's, at Frome. "Freely were the requisite plants, flowers and fruit provided, and freely, yet most tastefully, were these grouped and arranged, the whole, with the splendid service in connection therewith, being most vividly impressed on my memory. On each side of the altar were disposed beautifully flowered plants of Begonia insignis, these being fully three feet high and of proportionate circumference, and were particularly effective in the evening when the church was lighted. About the altar itself were disposed miniature sheaves of Corn and magnificent bunches of Black Hamburgh Grapes, and more of the latter with a background of colored Grape foliage were suspended to the ends of the choir stalls. Most beautiful was the low carved stone chancel screen. This was surmounted with neat, well flowered pot plants of Begonias Weltoniensis and Knowsleyana, on each side of the gates being pretty groups formed with a mixture of the plumes of Pampas Grass and flowering spikes of Gladioli. The screen was further festooned with Ferns, Dahlias, Allamandas, Bougainvilleas and other flowers. The pot plants were surrounded with Apples, Tomatoes, Grapes, and crosses formed with Corn were freely interspersed among the wreaths. At the base of the pillars on each side of the chancel were disposed handsome groups of fine foliage and flowering plants.

"The pulpit was tastefully decorated with black and white Grapes and other fruits, and cut flowers in variety, and many plants, fruits and vegetables were effectively grouped at its base. Nothing but white flowers were employed in the baptistry, and the effect was most chaste and pleasing. Floral designs laid on moss surrounded the base of the font, while the pillars were festooned with Ivy and white Clematis, and the basin hung with Roses, single Dahlias, Anemones, Begonias and other flowers, as well as choice fruits. The whole was surmounted with a cross formed with Grapes, Acuba leaves, and a semi-double Dahlia which I do not remember having seen before. Groups formed of flowering and fine foliage plants, fruit and cut flowers were disposed in each window sil, and all the gas standards were wreathed and otherwise decorated. By daylight the general effect was good, but in the evening when lighted up it was most beautiful."

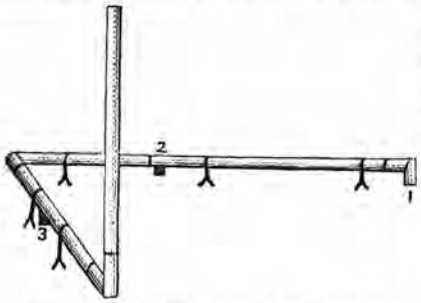
It is mentioned that the fruit and flowers were subsequently distributed among the sick poor.

A CLEMATIS CANOPY.

The *Garden* notices Clematis Flammula and C. vitalba growing together and forming a dense canopy over the porch of a gardener's cottage, and says, "We have seldom seen a more pleasing bit of autumn beauty in gardens than these two Clematises intermingled. C. Flammula has been for some weeks past a sheet of white, so floriferous is it, and Traveler's Joy is covered with feathery seed, which with the blossom of the other makes a charming picture. The Traveler's Joy blooms early in summer, and its flowers are succeeded by the feathery plumes of its seeds, which retain their place while C. Flammula is in bloom." Both plants are hardy in this country and are rapid growers.

SIMPLE HEATING APPARATUS.

Coal-oil stoves are somewhat employed for heating small conservatories and enclosed plant windows, but not with completely satisfactory results. Many trials of them have shown that when entirely depended upon for the requisite heat, they affect the plants injuriously, apparently by the smoke passed into the small volume of air enclosed in the room, which, of necessity cannot be changed for many hours at a time, and at that time especially, that is, during the night, when the stoves are most in use. When plant rooms attached to dwellings, or plant windows, receive the heat they usually need from an adjoining room, the oil stove may occasionally prove a valuable auxillary in supplying heat during an exceptionally cold night, or even for a few days of unusual rigor, and without any particular resultant harm. We should



CONDUCTOR PIPE FOR HEATING CONSERVATORY.

not hesitate to make use of them at such times. An apparatus is described in an English journal, *Gardening Illustrated*, by means of which coal-oil lamps are made available for the same purpose. This will be readily understood by the annexed engraving, representing ordinary rain conductor pipe, with openings at 1, 2 and 3. Lamps are to be set under the openings at 2 and 3, and the pipes are to be supported by standards, as indicated, at a height sufficient to allow the top of the lamp chimney just to enter the mouth of the opening. The pipes are to run around the border of the room. As many lamps may be used as shall be found necessary. The effect of heating the column of air in the pipes is to cause a rapid upward ascent of it, and the heated air flows out at the top while a current of cold air constantly passes in at the opening 1, to be heated in its turn. Thus, there is a very rapid change of the atmosphere of the room and the heat is equally diffused. Any tinsmith can fit up the pipes at a small expense, and two or three common lamps complete the outfit. An improvement over the use of an ordinary lamp, which might not hold sufficient oil, would be to have a low tin reservoir made that would hold a quart or more, and fit into the top of it the brass part of a lamp that carries the wick. This apparatus, while cheap, may, without doubt, prove a reliable outfit for the protection of small conservatories against times of severe weather of short duration, such as we experience almost every winter.

SEAWEED FOR THE GARDEN.

A correspondent of the *Garden* who considers Seaweed a good manure, says, "If horticulturists were but fairly alive to its good qualities, little of it would be allowed to be wasted." He advises dwellers by the sea shore having gardens, to get all they can of this material in winter, and apply it in the first place to Asparagus and Sea Kale, and any left over after that might be dug into the fallow ground, or put into a heap to rot for other purposes. He also thinks it valuable for land infested with slugs, grubs and worms, its application effectually ridding it of them.

TRICHOMANES RADICANS.

An experienced Fern-grower writes to the *Journal of Horticulture* "that he has just succeeded in raising some young plants from spores of Trichomanes radicans, which he believes to be the first time this has been accomplished in cultivation. Prothallia have been previously obtained, and some of these lived for five years, then dying without producing fronds. The present batch is six years old, and the prothallia have only recently produced the characteristic fronds of the species, which are at present very small."

DOUBLE GLOXINIA.—The *Revue Horticole* notices the fact of double flowers of Gloxinia being produced from seed by a gardener in Hungary. This is the first instance of the kind, although the Gloxinia has been in cultivation over a hundred years. It is thought that valuable double varieties may yet be produced.

PLEASANT GOSSIP.

FLOWERS FOR THE SCHOOLS.

Last month, when we offered flower seeds to the schools for next year's cultivation, we promised to give some extracts this month from the reports received from those who cultivated them last summer. Here we present the information on this subject received from a few places, and it indicates, in a manner, the general result of our last year's offer, although some reports are to the effect that unsuitable soil and other circumstances caused disappointment. The following letter is so happy in all respects we give it in full, and believe it will prove a means of encouragement to many others.

I wish now to acknowledge the gift of flower seeds to the children of Windfall School District, and to tell you of their success, although the kind donor of the gift is no more. Many were the tears shed in our little school room when I read to them the article in your MAGAZINE written upon the death of "our friend."

That you may understand what we had to contend with, I must tell you that our school yard had just been graded, and all the turf taken off, and as the soil was mostly yellow clay, we, of course, could not hope for any success in raising flowers without bringing some different soil. When I told the children of the offered gift, and of the necessary work if we accepted it, they said, "O, send for the seeds, and we can draw the dirt." They found a nice bed of soft, rich loam about seventy rods from the school yard. It would have done your heart good could you have seen those thirty children, ranging from five to fifteen years of age, with their carts and wheelbarrows, tugging back and forth, all through the intermissions, to bring the soil for their flowers. We first made a small seed bed in a warm, sunny corner on the south side of the house, and sowed such seeds as could be transplanted, and by the time the other beds were prepared these plants were large enough to remove.

Most of the children live so far away that it was impossible to work morning and evening, so, nearly all of the work was done at recesses. At my suggestion they arranged themselves in four sections, with one of the oldest pupils as leader of each division. Each section then made one large bed, of which they took the whole care through the entire season. We commenced our work the second or third week in May, and on the eleventh day of June the first flowers were greeted with great joy, and from that time until November first we have not been without flowers in our school yard. During the summer vacation some of the children went two or three times a week to water and take care of the flowers, and some had to go over a mile. Such beautiful Phlox I never saw, and Pinks, Petunias, Verbenas and Pansies. O, I can't tell you how pretty they were. They have covered the Pinks and Pansies to protect the plants through the winter, and saved seeds for another year. I doubt not that gift of seeds will bring infinitely more pleasure and good to those children than can ever be measured. The moral influence can never be estimated. We took a basket of flowers to the County Teachers' Institute, and many of the teachers could hardly believe they were grown in a country school yard.

At the time of the County Fair, some of the children, with my help, arranged a bouquet of cut flowers, which took a premium. We agreed to use the money to buy something to beautify the school room, a pair of vases, or something of that kind. We already have your chromo of Lilies on our school room wall. For that gift, please accept the heartfelt thanks of parents, children and teacher.—J. E. N., *Medina, O.*

The following extract from a letter from Ovid Center, of this State, is equally encouraging.

I commenced teaching here in the spring, and found the place in a bad condition, wood, stones and trash scattered all over the yard. The boys, with my encouragement and assistance, went to work and piled up the wood against the fence, and cleaned the yard of the stones and trash. In the center of the yard was a large hole filled nearly with stones, and it looked badly. The thought struck me that it would be an excellent place for a flower bed. By the advice of a neighbor, Mrs. C., who interested herself in the work, I took the stones out and made a low wall around the hole. One of the school officers had the goodness to haul with his team three heavy loads of rich soil, and filled the hole, and made an excellent flower bed, eleven by seven feet. We had also another bed thirty-two feet by four feet, by the side of the fence on the south side of the yard, in the right shape, nearly a foot higher than the rest of the yard. In the first place we spaded it up. The school boys, with a hand cart, hauled a number of of loads of rich soil and spread it on the top of this bed, and it made another excellent flower bed. With the help of Mrs. C., we sowed the seeds that we received from you and planted slips of Geraniums and other plants from the greenhouse and neighbors. I had the beds well filled with seeds and plants, and, by good cultivation and watering them when they needed it, everything was done that could be done

to help them along in growth and bloom. I love to cultivate flowers, it is a healthy recreation. I have heretofore cultivated flowers in many school yards. By having flowers in the school yard it helps me in governing my school, besides, the work and the flowers constantly exert a refining influence over my pupils. My flowers exceeded all my expectations; they were admired by everybody for their beauty. I took samples of them to two agricultural fairs in Seneca County, and received the first premium from both. I had them entered as a collection of flowers taken from Ovid Centre school house yard, cultivated by myself and pupils. They were sent for exhibition in order to stimulate other schools to beautify their school yards with flowers, instead of having them run up to noxious weeds.

Another letter of similar import must suffice for the present.

As it is nearing the first of October, I will send the report of the flower seeds sent to our school, free of charge, by your firm. They were blossoming so nicely that I have delayed writing to see how long they would continue looking bright and thrifty. The Petunias were, I think, injured by the heavy rains, for but three or four plants came up, and these were very small. The Sweet Peas are giving us many bouquets, even now. The Pansies, according to a young lady who visited the school, are "just too utterly lovely." Candytuft blossomed freely for a time, then went to seed. The Phlox bed, for nearly three months, has been a mass of brilliant beauty. The Balsams are the finest colors I ever saw, they did not, however, do very well as to numbers, on account of some insect which seemed to destroy them. The Cockscomb is not very tall, but is full of its curious flowers. The Zinnias and Portulacas had a very luxuriant growth, and were literally loaded with blossoms. The remainder of the seeds sent have been saved for next summer because of the lateness of the season when they reached us. Around one door were trained Morning Glories and Cypress Vines, around the other Morning Glories and Balloon Vines. All are delighted with the result of the experiment. The other day, one of the directors expressed a desire to procure some hardy vines and shrubs for the yard. The scholars have been very much interested in the success of our experiment. The flowers have given me almost if not quite as much pleasure as the company of a friend. Often when going up the path the Phlox would nod good morning from one side, at which Pansies would put on a doleful expression, or wink saucily, and the others taking the "cue" would salute me in various ways; the Cockscomb, scornfully, the Portulaca, timidly, the Zinnias, with a very stiff succession of bows, and the vines with a grace which they only can assume. All in all, they are a grand success. May the time soon come when all may know the beauty and comfort afforded by flowers. Thanking you again for the generous gift of seeds, I am,—E. G. D., *Rootstown, O.*

Without giving extracts from many other communications, as we might, it is evident that the cultivation of flowers in school grounds is, at least, something that the children enjoy. This being the case, can there be a doubt that by it much useful instruction may be imparted, a habit of close observation induced, a love of nature awakened, a disposition be cultivated to make our homes and abodes pleasant and cheerful, and that all these, with many other, good results will conspire to mold in a desirable manner the minds of the children of our land!

GERANIUM SPORTING.

A friend of mine has a plant of Geranium of which one branch has leaves which are nearly pure white. The condition seems to be permanent, as it has been aboout four or five months in that state. Is this the way sports originate? Is this the manner in which the Bouvardia Alfred Neuner and others from it were obtained?—J. B. H., *Kincardine, Ont.*

The branch above described is what is known as a sport, that is, a permanent deviation from the ordinary form of the plant. The change may consist in the leaves, or in the flowers, or both combined, and perhaps, also, a difference in the habit of growth. It was in this way that Bouvardia A. Neuner sprang from B. Davidsonii, (not from B. elegans, as noticed on page 371 of last volume.) Bouvardia A. Neuner has in the same way produced B. President Garfield, and another double pink variety in this country, and a rose-colored one in Germany. There is this difference, however, between these sports of Bouvardia and that of the Geranium mentioned. The latter is an enfeebled shoot and cannot be propagated. Branches of this character often present themselves on plants of Geraniums, but they have never been found to have sufficient vitality to maintain an independent existence.

CAPE POND-WEED.

In the September number of the MAGAZINE, page 276, you gave some account of Cape Pond-Weed. Can you tell me where to find it, and if it is expensive? From the description I think it would be a very satisfactory plant to have.—E. L. S., *Boxford.*

This plant, Aponogeton distachyon, is not yet advertised by the trade in this country. It is in cultivation at the botanical gardens at Cambridge, Mass., and in some private collections. We have ordered a stock of it from England, and hope to offer it in our trade another season.

KEEPING CHINESE HIBISCUS.

I have a nice, thrifty Chinese Hibiscus; will it live in a good, dry cellar, through the winter?—M. B., *Freedom, Ill.*

If the soil in which the roots are, is kept a little moist, the plant will winter well in the cellar.

UNTHRIFTY GLOXINIA.

I bought a Gloxinia last spring, and soon after I received it it threw up six sprouts. When about three inches tall they remained the same height, and I finally took off all the sprouts but one. That one grew finely for a while and began to bud, but every bud blasted, and I have not had a blossom this summer. What shall I do with the roots, and why did the buds blast? I have taken great pains with the plant, never wetting the leaves, and keeping it in partial shade.—MRS. H. H. C., *Waverly, Iowa.*

Too much moisture or too low a temperature, or both, may have been the cause of the unthriftiness of this plant. The Gloxinia requires a closer and more even temperature and a moister air than it would be apt to get when cultivated as a house plant, and kept in summer on a veranda or in a window. Still, there is danger in keeping it too close. It is a plant that can be well grown in summer in a cold frame with the glass slightly shaded, and a little air admitted most of the time. The buds blasted because the plant was in too weak a condition to perfect the flowers. The tuber, when dried off, can be kept over winter in dry sand at a temperature of 50°.

Next spring, about the first of April, put the tuber in a soil composed of equal parts of leaf mold and garden loam with a little sand. Use a small sized pot, and afterwards, when the pot is filled with roots, shift into one of larger size. Give a little water after potting, and continue only a moderate supply of water until the increasing foliage demands more. If possible, give the plant the advantage of a slight hot-bed, admitting air pretty freely, and after May continue it in cold frame.

HONEYSUCKLES—ROSES.

I think I have a plant of the golden veined Honeysuckle that will compare favorably with that of A. P. A., San Gabriel, Cal. It covers a large space of lattice work, seven feet high, and is about four years old. It has never bloomed, however, but the foliage is all one could desire. My Roses give me a great deal of trouble lately; they neither do well out-doors or in, they drop their leaves and look sickly, and my determination to make them grow seems only to make them do worse. I think, as does another correspondent of the MAGAZINE, that they are very "fussy."—F. L. J., *Sedalia, Mo.*

Good plants of Roses set in good, rich soil, and properly cared for, ought to produce satisfactory results for our correspondent. We know that Roses flourish well in that region of country; and in this case, we fear, the Roses are not so much to blame as something else.

WEST TENNESSEE.

In rambling through our dense woodlands along the great streams, the lover of the beautiful often comes upon a clump of our Tree Honeysuckle, or Azalea, sweeping gracefully in the gentle breeze and over-hanging the clear lake water. This shrub can not be excelled for beauty at the early season of its appearance, having a great profusion of delicate pinkish, Crape Myrtle-looking flowers ere any leaf makes its appearance, and growing in clusters six to ten feet high. One may gaze and admire by the hour this delightful harbinger of spring. It is very difficult to transplant and is seldom seen in cultivation. One who has never seen our lakes can hardly imagine the profusion and grandeur of the great Water Lily, with its broad leaves covering the surface of the water for acres, and throwing up their strong stems, mounted with large, double, creamy white flowers. We may enjoy one or two in a tub, but after seeing an acre or so would be disgusted with the experiment. Much has been written, and read with avidity, about the great lakes and fishing of the North, but no doubt many would be surprised at the magnitude and number of the fishing lakes of West Tennessee, surrounded by the mighty and almost impenetrable forests, where the wild deer and bear still roam at will. May be some of you readers might like to read a short description.—MRS. A. H. B., *Brownsville, Tenn.*

Is the Azalea here referred to A. calendulacea? So we should judge. Do not the flowers vary in color through different shades of yellow and scarlet combinations, such as flame color, brick red, saffron yellow, &c.? A description of the lakes and forests of West Tennessee would be gratifying.

FLOWERS FOR THE BLIND.

The contents of the following letter, we think, will prove sufficiently interesting to our readers to warrant its publication, coming, as it does, from one who can enjoy flowers only by touch and smell. How strange it seems to us that one without sight can cultivate plants.

It was a greater grief to me than to you that I was obliged to miss my Tuberoses and other flowers last summer; but the cause was I was unable to take care of them. I hope certainly to be fully able next season, as I am getting better slowly. Life is very barren to me without them, and yet, it may be you are not aware that I am blind, so as to wonder, as do others, what I can possibly care about what I cannot see. Yet no one loves the sweet, fragrant blossoms, or, through them, adores the kind Giver with heart fervency more than I do. Yes, I shall send for bulbs, if life is spared and a comfortable degree of health is bestowed. Besides, I have wanted the MAGAZINE, that I have heard about more than I can tell. Is it still to be published? It was a world's bereavement when "the floral king" was taken away, but it is my belief that it was from the fading flowers to a land where they are immortal.—C. M. R. G. *Fenton, Mich.*

PREPARE FOR SPRING.—Do not postpone longer any repairs that may be needed for the hot-bed frames and sash.

A BOG GARDEN.

I am much interested in the October article on a bog garden. Could you give more in detail directions for laying out, what to put in, &c.? perhaps adding some simple rock work. Many of your readers must have situations that could be easily utilized, and would gather together many of the abundant beautiful meadow plants so common, if their attention was more fully drawn toward this subject which is so little written about. If once established, under favorable conditions, why would it not be almost perpetual?—H. A. G., *Boston, Mass.*

It is a pleasure to plant lovers to stray occasionally by the side of a slow running stream, or about the margin of a pond or bay. Usually we find in such places attractive or odd looking plants that are to be found no where else. It is only natural we should desire to bring these plants under cultivation, when we can see more of them, and study their habits to better advantage. For such plants, the bog garden offers a home, and we would suggest that those able to supply the requisite conditions for this culture will find it a pleasing variation from the more common forms. In illustration of this subject the engraving, on page 3, of a view of the bog garden in the grounds of the botanical gardens at Cambridge, England, shows very clearly how the bog garden may be formed. It is desirable that there should be a constant supply of water, so there may be a slow current at all times. Our native flora supplies a great variety of plants for this purpose. When the depth of water is sufficient, that is, eighteen inches and over, and the supply steady, so that there will be no failure in a dry time, the Water Lilies may be raised, and Pontederias, or Pickerel Weed, and Heteranthera, and Eel Grass, and White Water Crowfoot, and the Water Target, or Brasenia peltata, and also, the handsome foreigner, the Cape Pond-Weed, Aponogeton distachyon.

For the margin, in shallow water, there is a numerous class of plants, and some of them are the different species of Rush, or Juncus, the Cat-tail Hair, or Typha, the Water Plantain, or Alisma, species of the Loosestrife, or Lythrum, and Nesæa, and Dutch Moss, or Anacharis, and the handsome Water Pitchers.

WINDOW BOG GARDEN.

On ground not submerged, but constantly quite moist, a great number of interesting plants may be raised, and among them are the Irises, of which we have several natives in different parts of the country, and several handsome Habenarias, members of the family of Orchids. Several species of the Crowfoot, the Marsh Marigold, or Caltha palustris, a handsome shrub called Button

Bush, or Cephalanthus occidentalis, species of Willow, and Poplar, and Alder, many of the Sedges, and Rushes, and some Ferns. This enumeration is only partial, and a far greater variety will be found when one sets about stocking such a place. Those who know these plants can procure them in their native localities, or they may take what they fancy, even if they do not know what it is; but those who cannot gather the plants for themselves can purchase them of plant collectors in different parts of the country, who supply them, correctly named, at reasonable rates. The plants can be moved either in spring or fall. Bog plants may be cultivated in the greenhouse, conservatory and window garden, by growing plants in sphagnum in an earthen pan, as shown in the illustration herewith, first described by a writer in the English journal, *Florist and Pomologist*. An earthen pan, about twelve inches in diameter and three or four inches deep, with a hole in the base, the same as a flower pot, has placed in the bottom of it about an inch of rough peat or black humus soil, such as is found in bogs, and over this some old sphagnum moss pressed down, and lastly a layer filling the pan of fresh, new moss. The surface, when completed, should be well rounded up, as the plants will appear better on this convex surface. The contents should now be well watered, and is then ready to receive the plants The pan should be set in a saucer supplied with water, which rises by capillary attraction, keeping the soil and moss always moist. The plants that may be set to grow in this moss are of quite a large variety, but among the most interesting of these are the Sundews, or Droseras, Venus' Fly-trap, or Dionœsa muscipula, and the Butterworts, or Pinguiculas; but many others will be found to thrive in their company. The pan should be kept in a cool place, or about 50°, until the season advances; it should be fully exposed to the light, and air should be given as freely as possible. This method of cultivation, besides being a novelty, we believe, will be found very entertaining.

HORTICULTURAL MEETING.—The annual meeting of the Western New York Horticultural Society will be held in this city, commencing Wednesday, the 24th day of January.

GERANIUM BUDS BLASTING.

I herewith send you some Geranium buds. In my greenhouse I have a miscellaneous collection of plants. Heliotropes, Callas, Primroses, Scarlet Bouvardias, Begonias, &c., are not effected; but the Geraniums set buds that do not open out, they dry or blast before fully developed. I heat the greenhouse with a smoke flue. I have excellent draft, no escape of smoke or gas can be detected in the house. The flue is built of brick. I keep the temperature about 60° day and night, running higher only when there is sun light. Can you give me any information in regard to the cause of such a destruction of buds? A reply to my request from any one will be kindly received.—H. V., *Ada, Ohio.*

The little sunlight of this season of the year may possibly combine with some other causes that can be learned only by actual inspection of the premises, to prevent evaporation, and consequently leave an excess of moisture about the plants that affects them as described. In the course of two or three weeks, when the skies will, no doubt, be brighter, the plants will probably present a healthy appearance, the flowers expanding as one would wish. To see that these plants have proper drainage, and to be careful not to over water them just now, is the immediate attention required.

WHITE RUSSIAN OATS.

It may, perhaps, be interesting to you to receive a statement of the measurement of a crop of Oats which I made last season, the seed of which, the White Russian, I obtained two years before from your establishment. The ground occupied on my small farm was two acres and two-thirds, according to the measurement made by chaining. I sowed three bushels of seed broadcast, and covered it with the Acme harrow. I harrowed it with a fine tooth harrow when a few inches high. The crop was quite uniform over the field, and measured on an average five and a half feet high. None of it lodged, except a few spots not a yard square. The stalks averaged about a fourth of an inch in diameter. My men drew from this small field thirteen good two horse loads. I I threshed one load, a fair average, and I had from it a little over twenty bushels, or at the rate of ninety-eight bushels per acre, from a bushel and an eighth of seed per acre. It was sowed after moderately manured corn. I ascribe the success to the excellent variety and to the harrowing.—JOHN J. THOMAS, *Union Springs, N. Y.*

INSECTS AND FLOWERS.

In walking about over the seed farm, the past summer, where acres of annual flowers are raised for their seeds, the thought of their fertilization has been an ever recurring one. Here are plats or strips of ground, contiguous to each other, in one large body, each with one distinct variety or color of Phlox Drummondii, different from all the others. In the same manner are raised Verbenas, white, blue and various reddish and pink shades; so, also, are there many varieties of Petunias and other kinds of flowers. And yet all of these different plats produce their seeds true to their variety. If these flowers are fertilized by the wind or by insect agency, why is it that they are not inextricably mixed? If seed plats consisted of plants of one species in a natural condition, we might plausibly account for their true reproduction of themselves by the theory that the peculiar construction of the reproductive organs of each species was such as to protect it from all other species; but in this case the varieties are the results of many crosses, artificially produced through a long course of years. Why, then, does not this crossing go on unceasingly by the action of winds and insects? Who can answer? We do not for a moment intend to insinuate by this query the non-existence of the facts upon which are based the mass of recorded obsetvations in regard to the fertilization of flowers, patiently and perseveringly made for years by such able naturalists as DARWIN, Sir JOHN LUBBOCK and others, who have written well upon the subject. But it is very evident that we are yet far from possessing all the facts necessary to an intelligent understanding of the fertilization of flowers, and may confidently hope for much more in regard to it from future observations of naturalists. Sir JOHN LUBBOCK is still carefully pursuing his researches in natural science, and has lately brought out a work on "Ants, Bees and Wasps." The work is published in this country by the Appletons as one of the "International Scientific Series." This work records the observations and experiments of several years on the habits of the social hymenoptera; consequently it is not specially directed to fertilization by insects, although their agency in this process could not go unnoticed by one who has heretofore devoted so much time to it. The work is of exceeding interest throughout. We now only notice some of the statements upon the relations of these insects to plants. "It is generally admitted," says our author, "that the form and color, the scent and honey of flowers are mainly due to the unconscious agency of insects, and especially of bees. Ants have not exercised so great an influence over the vegetable kingdom, nevertheless, they have by no means been without effect. The great object of the beauty, scent and honey of flowers is to secure cross fertilization; but for this purpose winged insects are almost necessary, because they fly readily from one plant to another, and generally confine themselves for a certain time to the same species. Creeping insects, on the other hand, naturally would pass from one flower to another on the same plant, and, as Mr. DARWIN has shown, it is desirable that the pollen should be brought from a different plant altogether. Moreover, when ants quit a plant, they naturally creep up another close by, without any regard to species. Hence, even to small flowers, such as Crucifers, Compositæ, Saxifragas, &c., which, as far as size is concerned, might well be fertilized by ants, the visits of flying insects are much more advantageous. We know how fond ants are of honey, and how zealously and unremittingly they search for food. How is it, then, that they do not anticipate the bees, and secure the honey for themselves? This is guarded against in several ways. First, there are contrivances for preventing useless insects from gaining admission to the nectaries; then, aquatic plants, by their isolation, are secure against ants or creeping insects. Nay, even many land plants have secured themselves the same advantages, the leaves forming a cup round the stem. Some species have such a leaf-cup at each joint, in others there is only a single basin, formed by the rosette of radical leaves. In these receptacles rain and dew not only collect, but are retained for a considerable time. The next mode of protection is by means of slippery surfaces. In this case, also, the leaves often form a collar round the stem with curved surfaces over which ants cannot climb. Of this method of protection the Cyclamen and Snowdrop offer familiar ex-

amples. In vain do ants attempt to obtain access to such flowers, the curved surfaces baffle them, when they come to the edge they inevitably drop off to the ground again. In fact, these pendulous flowers protect the honey as effectually from the access of ants as the hanging nests of the weaver and other birds protect their eggs and young from the attack of reptiles." Several peculiar forms of the parts of flowers are noticed, which prevent ants from reaching the honey. So, also, the hairs of some plants serve the same purpose, and on others it is effected by viscid secretions. "Every one who has any acquaintance with botany knows how many species bear the specific name of 'viscosa,' or 'glutinosa.' Even those who have never opened a botanical work must have noticed how many plants are more or less sticky. Why is this? What do the plants gain by this peculiarity? The answer probably is, at any rate in most cases, that creeping insects are thus kept from the flowers." How ants do affect many plants is fully noticed, but this part of the subject must now be omitted.

Bees are considered to be the most useful insects in fertilizing flowers, and in this work the preferences of bees for flowers of different colors is shown by numerous experiments. Our limits fail us to give this part of the subject attention in detail, and we leave it hoping to resume it in future. But we cannot close without advising those interested in this subject to procure the book, and use it as a suggestive means of making experiments and observations for themselves in one of the most interesting departments of natural science.

THE RINGS OF TREES.

For a long time it has been considered true that the rings seen on a cross section of a tree stem indicate by their number the certain age of the tree, one ring being supposed to be formed each year. Recently, facts have come to light to disprove this belief, for such it appears to be.

In the last number of the excellent *Popular Science Monthly* appears an article by A. L. CHILDS, M. D., giving his observation, in tabular form, upon some Red Maples, Acer rubrum. Dr. CHILDS planted Maple seeds in the spring of 1871, and raised some trees which were transplanted in 1873. Last year, finding they were too near together, a part of them were cut out. Sections were taken from the butt-ends of four trees, and the rings counted. He says, "The situation, exposure and condition of these four trees were, so far as I could see, identical.

I had personal and positive knowledge that they had each twelve years' growth upon them, and I could count on each of the different sections from thirty-five to forty concentric rings. True, I could select twelve more distinct ones between which fainter and narrower, or sub-rays, appeared. Nine of these apparently annual rings on the section were peculiarly distinct, much more so than any of the sub-rings; yet, of the remaining it was difficult to decide which were annual and which were not." The thickness of the different nine was quite variable, some measuring even as much as eleven times greater in thickness than others. During all the years of the growth of these trees the doctor had kept a meterological record, and from it was able to ascertain what had been the daily temperature, and the rain fall, and thereby he formed a table showing the relation of temperature and rain fall to the growth of the rings. "An examination of the table," he says, "shows a general relation of cause and effect between high temperature and large rain fall and greater growth." Heat and moisture operating together in proper proportions produce the thicker rings. While, as one or the other is in excess, or absent, the growth is checked, and thus has time to condense and harden, and form these sub-rings; and the more frequent these alternations the greater the number of them."

It is hardly necessary for us to make the inference for our readers, that the simplest deduction in science should, before acceptance, be submitted to vigorous observation. Nothing seemed plainer, when it was a known fact that a layer of wood was formed annually next to the bark, than that each ring indicated an annual layer. Now with the knowledge that each partial interruption of the flow of sap is marked by a ring, we perceive how wholly unreliable it is to compute the age of a tree by the number of concentric rings.

NATIVE FERNS.

We present to our readers portraits of two more species of Pteris, both of which are cultivated for their beauty and elegance. The drawings were made from growing plants.

Pteris Cretica, or the Cretan Brake, so named by LINNÆUS, because, in his time, it was known to grow on the Island of Crete, and in other parts of Southern Europe about the Mediterranean Sea, is found, according to Dr. CHAPMAN, in shady woods in middle and East Florida. The root-stock creeps just under the surface of the ground, sending up numerous fronds as it advances. The stipe, or stem, is from six inches to a foot in length, and the frond as much more, so that the erect fronds stand from one to two feet high. The fully developed fronds, however, do not stand erect, even the stems slant at quite an angle, and the fronds spread out flat and even drooping. The fronds measure from four to eight inches, and even more, in breadth. The pinnæ are from two to five inches in length, and on sterile fronds often nearly an inch in width, while the fertile ones are but a quarter of an inch, or little more, in width. Young plants very frequently have fronds consisting of merely three pinnæ, all sessile at the same point, like a three-parted leaf, but usually the fronds are composed of two to four or five pairs of sessile fronds, and an odd, terminal one. The lowest pinnæ are nearly always cleft nearly to the base into two, or occasionally three, parts. The sterile pinnæ have the edges serrated, or saw-toothed, and each tooth terminates in a little spine. The fertile pinnæ exhibit serrated edges only near the apex, the rest of the margin showing the straight or entire edge, formed by the reflexed involucre covering the sporangia, situated, as in all species of Pteris, upon a marginal vein-like receptacle. The texture of the fronds is firm and coriaceous.

PTERIS CRETICA.

We have already noticed that this species is a native of Southern Europe; it has also been found in Mexico, and in Guatemala, in Asia from the Ural Mountains to Arabia, in the Himalayas, and in Japan, also in Abyssinia, and in the Phillipine, Fiji and Hawaiian Islands.

A variety of this Fern, called albolineata, or white-lined, is very much admired and cultivated. Each pinna has a whitish band or stripe along the middle from the base to the apex, and this in contrast with the darker green edges, gives it a very striking appearance.

Pteris longifolia, or the Long-leaved Brake, is another species of Pteris found in this country only in Florida, and there only at Key West, and in the open Pine barrens at Miami. The plants stand from eighteen inches to three feet high, the stipes being from six inches to a foot in length, and the fronds from one to two feet; the fronds, in breadth, measure from four to nine inches, and are oblong

lanceolate in outline. The pinnæ are from one-sixth to nearly a half inch in breadth. The largest fronds have as many as forty-two pinnæ on each side, and some of the smallest only five or six pairs. The longest pinnæ are near the middle of the fronds, and in well developed specimens are three or four inches long. From the middle of the frond downwards they decrease in length, until at the base they often shorten up to a length less than an inch. The sterile pinnæ are from a quarter to a half an inch in width, and finely denticulate on on the margin; the fertile pinnæ are much narrower, usually being less than a quarter of an inch. The pinnæ are nearly sessile.

EATON says this Fern is found in the "West Indies, Mexico and Venezuela, and in tropical and sub-tropical regions all around the world, including Southern Australia, Syria and the Mediterranean countries of Europe."

In pot culture this Fern has an erect, noble appearance, being somewhat vasiform. Both species now described are valuable in the greenhouse, and are particularly well adapted to window culture, and, because of their merits in these respects, they can usually be procured from plant growers, who are seldom without them. They will both thrive in well drained pots of light soil, composed of leaf-mold, sand and loam.

PTERIS LONGIFOLIA.

A GRAPE DISCUSSION.

A discussion upon Grapes was held at the meeting of the South Haven and Casco Pomological Society, at South Haven, Michigan, in November last. As the speakers participating were practical fruit-growers, and in a good fruit region, their remarks are of some interest, and we give the pith of them.

One speaker said, "In regard to the white Grapes of the new kinds, the Prentiss has made as strong a growth as the Concord. Would set Concord instead of Delaware." Another held the opinion that Grape raising would be over done. He remarked that "of the new white Grapes, the Prentiss and the Niagara are both good. The Niagara I cannot set under the present arrangement of the company holding it. The Pocklington is a fine Grape and very hardy, having stood 32° of frost without harm. After all, I agree with HORACE GREELEY, that the Concord is the Grape to plant for the million." Another speaker said, "I planted one thousand Niagaras, last spring. Some of the larger size have borne a few clusters of very nice fruit this year, notwithstanding the unfavorable season. I believe the white Grape is the coming Grape, and I believe the Niagara is the coming Grape for the million."

In reply to these remarks a member said, "I have not so much enthusiasm as my friend for the Niagara. When you come into the great general market for Grapes, the dark, or black Grapes are preferred, and I can sell one hundred pounds of Concord to one of Niagara, or any other white Grape. I can grow Concords at a good profit for thirty-two cents for a ten pound box. The Concord is the Grape for the million. The Brighton is a very healthy, hardy kind, and pro-

ductive." One member stated that there had been several thousand acres of Grapes planted between South Haven and New Buffalo, and he believed the prices would rule very low after a few years.

A speaker said that twenty-five times as many Concords were sold in Chicago as of all other kinds together; that the Concord out sells the Catawba; that white Grapes can be sold only to a few customers; that the Brighton is like the Catawba, but two weeks earlier, hangs well on the vine, and is a good keeper; that the Worden is early and thrifty as the Concord, and of a better flavor.

Another member closed the discussion with the remark that "quality will rule the market, and after the novelty wears off, the white Grapes will sell for no more than the dark ones."

INSECT PESTS.

Being an old subscriber to your valuable MAGAZINE, I write for information about a Rex Begonia, which seems to be thrifty and throws out plenty of leaves, but they are attacked by a white mealy bug, which eats holes in the leaves, and at a certain stage of its existence rolls itself up in a sort of a web and still preys, it seems, on the leaves and stems. I try to keep them off by hand picking, but of no avail. I should like very much to have a remedy from you or some of your correspondents.—MRS. S. J. T., *Paulding, Ohio.*

In case of a single plant, like this, we should remove the mealy bugs with a pin or pointed stick, watching for them carefully and destroying them as soon as discovered. If a number of plants should be badly infested, some more general means of destruction would be needed. This might be the use of alcohol, by applying it to the insects with the point of a camel-hair brush, which will kill them, and then syringing the plants freely to cleanse them. The following mixture is advised by good authority for the destruction of red spider and mealy bug. One gill kerosene, two pounds whale oil soap, one pound tobacco soap, and eighty gallons water. The liquid is to be applied with a syringe, and is said to be more effective for red spider than sulphur or its fumes, and is also a sure death to mealy bug and to the green-fly and the thrips. For green-fly and thrips alone, the easiest as well as the most efficient method of destruction is by tobacco fumigation. We know by experience that whale oil soap and tobacco soap are valuable agents for the destruction of insects, and those raising plants largely should be supplied with them, but if not at hand when the insects need attention, we should not hesitate to substitute for them good soft soap, or even common brown soap, diluting in sufficient water to make a strong suds, and adding the oil, and afterwards the full quantity of water. One-eighth part of the substances mentioned above would make a sufficient quantity for ordinary use.

VARIOUS INQUIRIES.

"Can you tell me," inquires H. M. S. W., "if the fruit of the Japanese Quince can be utilized in any way?" This fruit is too austere for cooking, and the only use to be made of it would be for the seeds it contains. If the fruit could be supplied in considerable quantity, as probably it will not be, it might be purchased by nurserymen who could sow the seeds to raise young plants.

Mrs. N. M. B., inquires when to trim the Wistaria, and if there is danger of trimming it too much. The Wistaria receives but little attention in the way of pruning at the hands of cultivators in this country, and yet it produces its flowers abundantly. We doubt if much more is necessary than to trim it sufficiently to keep it in place, or to cause it to take some desired form.

E. R. T., writes, late in the fall: "I wish to inquire why my Amaryllis rosea and alba produce leaves three yards long and do not bloom. I do not repot. Amaryllis Belladonna dried off, and I gave it a dry rest, and it is now sprouting again. But the A. longiflora will only grow long leaves." In this case we should judge the plants were overpotted, that is, in pots too large, and perhaps, too, they are kept constantly moist; for, though they need not be dried off entirely, they can have a partial rest by withdrawing all but a little water. We should hold back the water for a while, then turn out the plants and reduce the balls of soil and repot in smaller pots, giving a little water after transplanting. We should still allow the plants to stand comparatively dry, and a little cool for a few weeks longer, and then increase the heat and water, and expect bloom to follow. The same party inquires, "Why

does my Stephanotis refuse to bloom in a bay window, or in a pit?" A pit is too cool for this plant. In a bay window, with plenty of sun, and heat about 70°, potted in a large pot or box in rich soil, we should expect a free growth and bloom. The plant wants plenty of root room. And, again, another query: "Why do not my fancy Caladiums form tubers, and not only fibrous roots. They grew finely all summer." The Caladiums require a long season, and in the fall, the warm greenhouse is necessary in our climate to enable them to perfectly complete their growth.

CELERIAC.

I wish you would give me the best method of preparing Celeriac for the table. I had some very fine, this year.—J. H. W., *Sterling, Ill.*

Celeriac is used in soups, or it is boiled and then sliced, and eaten with a little salt and vinegar; or it is prepared as a salad with Water Cress, using hard boiled eggs and other salad dressing.

OUR NEIGHBOR.

The *Gardener's Monthly*, in its last issue, published a fine photo-electro engraving of our esteemed friend and townsman, P. BARRY, the eminent pomologist and celebrated nurseryman. The portrait is a good one, and well displays the fine face and well formed head of a man, who, for many years, has stood among the foremost leaders of horticulture in this country, and has exerted an influence in his profession of the highest value. It is to be hoped the other senior member, Mr. ELLWANGER, of the firm of ELLWANGER & BARRY, in due time may be similarly presented to the public, for it is unnecessary to add the honor is equally deserved. The active service of this firm is now mostly borne by the junior members, sons of the seniors, guided by their counsel and experience; worthy sons of worthy sires. In this connection, we call public attention to the latest issue of this firm's catalogue of ornamental trees and shrubs, lately from the press, for it is a pleasure for us to apprise our friends of such a wealth of horticultural information as this catalogue supplies. Although most of our readers may not have the opportunity to see the grounds of the far-famed Mount Hope Nurseries, containing probably the most complete assortment of hardy trees, shrubs and plants in the world, they may form some opinion of it, and learn much for their own benefit by a perusal of the catalogue, containing, as it does, clear and accurate descriptions of the plants there raised, illustrated with numerous engravings; it is in itself a work exceedingly valuable for reference, having more of the nature of a general treatise on the subject to which it pertains rather than that of an ordinary catalogue. There is no equal of its kind published in this or any other country.

RAISING VERBENA PLANTS.

Strong, healthy plants of the Verbena, that will bloom abundantly, can be raised in no way so well as from seed. Plants from cuttings are never so strong as those from seed, and are more liable to attacks of rust and insects, and do not bloom as well. Seed sown this month or next, according to location, north or south, will be in time to raise strong plants for spring setting. Plants can be raised in the greenhouse, hot-bed, or in the window, if properly cared for. Take a shallow box, two inches or a little more in depth, and fill nearly full of soil composed of equal parts of leaf mold and turfy loam, mixed well together, and a little sand added, and all sieved so as to take out the coarse material; sprinkle the soil and let it stand for an hour, and then sow the seed by sprinkling it on the surface in straight rows about an inch and a half apart, and then cover by sprinkling some sand about a quarter of an inch deep over all. Cover the box with a pane of glass, and keep it in a moderately warm place. Supply water by sprinkling in the gentlest manner when needed. In two or three weeks the little plants will show themselves, and then they must be given light and air, and carefully tended until large enough to transplant into another box or pot, where they will stand an inch or two apart. Grown in this way for a month they may then be again transplanted about three inches apart, to stand until removed to the open ground. Before planting out, it is well to harden them off by giving air freely. Although it is best to keep clear of late frosts, it is well to get the plants out into their beds early, watching the weather and giving protection in times of danger.

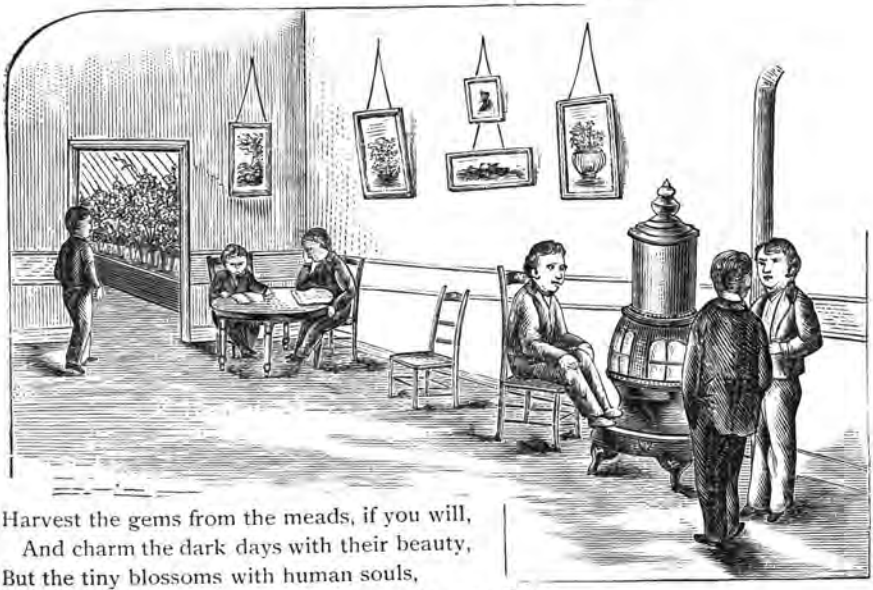
WAYSIDE WAIFS.

Beautiful flowers, and beautiful thoughts
That gather the flowers together,
For shelter under the crystal roofs,
From the chill of the wintry weather.
O! dear little angels, gold, pink and blue,
We know that the world is better for you.

But, ah! there are flowers that will need our care,
On the highways and byways fading;
Dear, sweet little blossoms, more grandly fair,

And so few to see to their shading—
Cold, shivering limbs, and wee, shoeless feet,
That patter along the ice-covered street.

Will no one be kind to the homeless things,
For the sake of the one great Father?
Will none in the shelter of some warm eaves,
Those bright, living promise buds gather?
They will grow into flowers, and He will say,
"Ye gathered my wildings from the highway."



Harvest the gems from the meads, if you will,
And charm the dark days with their beauty,
But the tiny blossoms with human souls,
Must not be forgot in our duty;
Some wanderer saved from the frosts of time,
May bloom in the fields of a fairer clime.

—Wm. Lyle.

AN UNCOVETED DRIVE.

"Where have you been all this afternoon?" inquired Fanny Gage of her father, as he stepped into their cheery dining room one evening at late supper time.

"I've been where it's a good place to go sometimes," he answered, "and where I want to take three or four of you to-morrow, in the three-seated carryall, to make a call,——"

Here Fanny, the young lady-daughter, began to demur by saying that she didn't wish to make acquaintances that she shouldn't care to continue. But Mr. Gage checked her by saying:

"There, Fanny, no more if you please; you'll have to trust to my judgment this time. You have controlled the holiday festivities thus far just to your liking, and now you will concede a little to me. To-morrow, I shall expect you and Lewis, Florence and Maurice to accompany me for a short drive. That number will still leave room for the bright, unfortunate boy whom I have promised to bring home with us for a few days."

Mrs. Gage flashed a look of inquiry at him, and received in return an intelligent glance which seemed assuring. The others, recalling their father's connection with an Orphans' Home, and his very practical way of exercising benevolence, exchanged significant looks and nudges as they all gathered around the table in silence, while Mr. Gage invoked a blessing from the giver of all good things upon the daily bounties at their command.

During the meal Mr. Gage said to Maurice, "I was glad when I came in to-night to see you with the corn-popper over the fire. I shall want at least a peck of popped corn to take with us to-morrow. And girls, you may make into small bouquets all the flowers you can muster; and you, Lewis, may put a bushel-sack of good eating apples under the front seat of the carryall."

Then Maurice responded, "As to the pop-corn, father, I assure you it is not very good this season. Lewis says it's mixed with common field corn. I can see that for myself on some of the ears, but I don't see how it can mix at all when it grew so far from any other kind. This disappointment in corn that I've raised, myself, has given me a home thrust, and I'd like to understand this mixed process a little better. Of course, I know it's said that the mischief is caused by the dust or pollen of the flowers on the tassel being blown by the wind or carried by insects, and thus scattered over other kinds of corn. But what if it is? the ear of the corn is closely wrapped in husks, and how can it be changed by any amount of pollen, even if it were scattered over the whole plant?"

"If you understand botany," said Fanny, it would be easier for you to comprehend it."

"Nonsense!" retorted Maurice, scornfully, "botany is for girls."

"Then all the vegetable world is for girls," she responded, "and you boys needn't bother your heads about reasons for how things grow."

"O, well, suppose with your botanical learning you make me understand how the pollen from yonder corn-field could affect the ears of my pop-corn in the back garden, wrapped up in their husks. Come, now, let's hear."

Fanny glanced anxiously at her father and answered, "O, you know just enough to spoil you, and not enough to understand; and I don't know where to begin."

Then Mr. Gage came to the rescue, saying, "I will explain to you, in a general way, the mystery that so puzzles you, for mystery it is, and always will be. In the pollen lies the vitality which stimulates into growth the future seed or fruit.

This pollen is always found on the stamens of the blossom. The pistils are always connected at the base with the germ of the future seed. When the pollen dust comes in contact with the pistil, it is transmitted through that organ to the dormant germ that is to form the seed, which then immediately begins to grow. The microscope proves that this is the mission of the pollen; but nobody can tell you by what impetus or secret power the little granules find their way to the hidden germs, and set them growing. Now, an ear of corn, compared with ordinary products of growth, is a marvellous development. Most plants have both stamens and pistil, (one or more,) in the same flower; but the maize has staminate flowers on the tassel, while the crude, pistillate flowers are on the young cob. Thus, what we call silk, represents the pistils, each being attached to a germ that is to form the future grain

The ripened pollen above falls upon the silk, and it may also receive that which is brought by high winds, or clinging to insects, and which may impart a new character to a portion of the grain. But, after all, just what the secret process is by which a grain or seed or fruit is vitalized into growth from a dormant germ, by little grains of pollen, is what nobody can tell you. By the way, did it ever occur to you to try to find out by what numerical process the rows of grains on an ear arrange themselves in even numbers, so that you never find nine, eleven, or other odd number of rows? And, if you found out how it was done, did you find out why? There must be a reason for everything in nature."

"I give it up," said Maurice; and then, as they left the table, Mr. Gage continued, "I hope, Maurice, this little talk will stimulate you to further investigation. You'll find the study of plant growth, in its different forms, a most curious and fascinating subject"

"I am ready to begin," answered Maurice. "Fan, where's your Botany"

"Its safe," she replied; "where's your corn popper? let's go to work for to-morrow."

When the morrow came, bouquets were made, various baskets were filled with cakes, nuts and pop-corn; a lounge was arranged in a pleasant corner near the grate, and an extension chair was close at hand. When all was ready, our party was soon driving at rapid pace through the streets, when suddenly an unexpected turn was made, and Florence exclaimed:

"Why, papa, I thought we were going to the Orphans' Home!"

"I did not say so."

"Well, but—"

"But what, daughter?"

"I don't know."

And then there was a laugh at Florence's expense. Finally Maurice ventured to say, "Father, you said we were going to a place where it is good to go sometimes."

"We are."

Then in the silence that followed, Florence pinched Maurice exultingly, while the horses sped at a fleet pace until another turn brought them in sight of a large plain brick building, when exclamations of wonder escaped from the older ones, while Florence exclaimed:

"Why, papa Gage! you are taking us to the Poor House!"

"To the County Infirmary, my dear."

But Florence thought the difference in name did not change its character, and as the vehicle reached the main entrance and stopped, no one but Mr. Gage was inclined to enter. Taking no notice, he called a man to hold the horses and assisted Miss Fanny at once, while she was saying, "I'll wait here, papa, please, until you all come out."

But papa didn't please. When all were alighted, the boys were told to take the pop-corn and nut baskets, and the girls to carry the baskets of bouquets and cakes. Then Mr. Gage borrowed a basket, and, filling it with apples, led the way to the place where the women and children were mostly to be found, all distributing from their baskets as they went along; then on to the sick rooms, where men, women, and two or three young persons were confined permanently to their beds. These were made thankful and happy, even unto tears. The girls noticed that there were pot-plants in these rooms, and were astonished when one woman whispered that their father had ordered them to be sent there on Christmas morning.

Before they knew it, the girls found themselves very much interested, and began taking items. The boys stood outside the doors except when some grateful creature wanted to see Mr. Gage's sons. But all observed this; the cakes and nuts were laid one side, the bouquet held tightly till the apples were handed out, and then both hands grasped the large, fair fruit and turned it over and over, as the very feel of it was fraught with healing. O, how refreshing to the sight and taste of a wasted invalid, famishing for fruit, is a cool, juicy, mellow, rosy apple! (the Northern Spy, for instance.) Mr. Gage understood this, and the rest of the apples were brought and distributed through the sick rooms.

Then returning, on their way out, they were greeted by smiling faces, unused to smiles; only the children seemed natural. Most of the older ones had repulsive faces and bore traces of disease and immoral lives. But they were human beings, Mr. Gage said, and must be treated as such. Before getting outside,

Maurice had whispered to Florence, "Father's forgotten that boy." But on reaching the vehicle, there were the matron and her husband, tucking up on the middle seat, the handsomest, brightest looking boy they thought they had ever seen. We will anticipate the queries and answers that passed that night concerning him, and explain that his limbs were paralyzed when an infant, so that he had never walked. His mother, and only relative, had become disabled by poverty and infirm health from having the care of him; and his being not strictly an orphan, excluded him, according to the rules of the Home, from becoming an inmate there.

As the Gage family took their seats in the vehicle, they were introduced to Henry Strong. During the drive he said little, but his quick, intelligent glances proved him a good listener. When the party reached home, Mr. Gage lifted Henry in his arms and carried him to the lounge to rest, when Mrs. Gage, in the kindest manner possible, arranged him comfortably and made him feel unembarrassed and at ease.

That evening, being drawn out in conversation, Henry questioned about the Mistletoe he noticed among the late Christmas decorations, and learned that it was called a parasite, because of its growing upon certain trees, from which it absorbs its sustenance; and that there are various plants of that class which exist in the same way. Also, that in the animal world, from man down to the slug-worm, there is no exemption from vegetable or animal parasites.

Finally, Maurice reverted to the talk of the evening before, and marvelled still more when he learned that, should a grain of pollen by chance stimulate or fertilize into growth a seed-germ outside its own family of plants, that such seed may produce a new and strange plant, but the plant will never mature seed from which to grow others, and hence, is called a monstrosity. Thus nature avenges her violated laws.

This kind of talk soon created an interest which culminated in plans being made for next season's culture of plants. Finally, it was observed that Henry was reclining in his chair with closed eyes. Mr. Gage inquired softly if he were tired.

"No," said he, "I was only thinking."

"May I know your thoughts?" was asked.

"Yes; I was wondering if I, myself, am not a parasite or a monstrosity, or both."

"O, no, no!" they all exclaimed at once, and from that moment he was taken into their hearts.—AUNT MARJORIE.

LITTLE MABEL'S BIRTHDAY.

A Rose bush stood in the window,
And on its branches green,
A promise of bloom and beauty
In clustered buds were seen.
"It will blossom for my birthday,"
Dear little MABEL said,
And I promised a bud and a blossom
For the curls on her golden head.

I held her close on my bosom,
And thought, as I kissed her eyes,
That it must be an angel missing
Out of GOD'S paradise.
Since dear little, darling MABEL,
Came on that New Year morn,
To fill all our hearts with gladness,
In the home where she was born.

"Next week is the little one's birthday,"
Said MABEL'S father to me,
"There must be a new dress for the darling,
As white as white can be;"
And so, when the child was sleeping,
And all the house was still,
I fashioned a dainty garment,
As loving mothers will.

How fair she will be, I kept thinking,
And I often paused and smiled,
With all a mother's fondness,
On the face of my sleeping child.
"There will be no angel fairer
Than this little one of ours,
Clad in her birthday garment,
And crowned with sweetest flowers."

To-day is the little one's birthday,
She lies in the parlor there,
Clad in her birthday garment,
With a Rose in her golden hair.
You would fancy that she was sleeping,
And would wake at the lightest breath,
But, ah! our little one's slumber
Is the strange, white sleep of death!

I have knelt by the side of our darling,
And wet her face with tears,
Thinking how much we shall miss her
Through long and lonesome years;
I have called the pet names over,
Kissed lip and cheek and hand;—
Did she know that I was near her?
Did she hear me and understand?

Can it be she has gone forever?
I cannot make it seem
That she will not wake in the morning;
It is all a troubled dream:
Yet I know that our little MABEL
Has answered an angel's call,
And is keeping her birthday in heaven,
The fairest angel of all.

—EBEN E. REXFORD, *Shiocton, Wis.*

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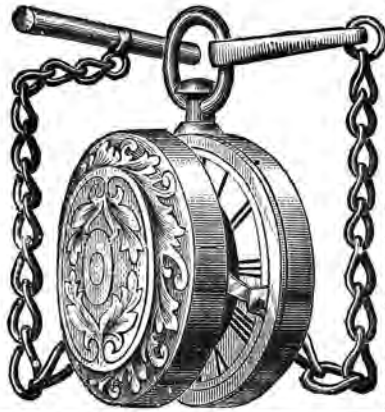

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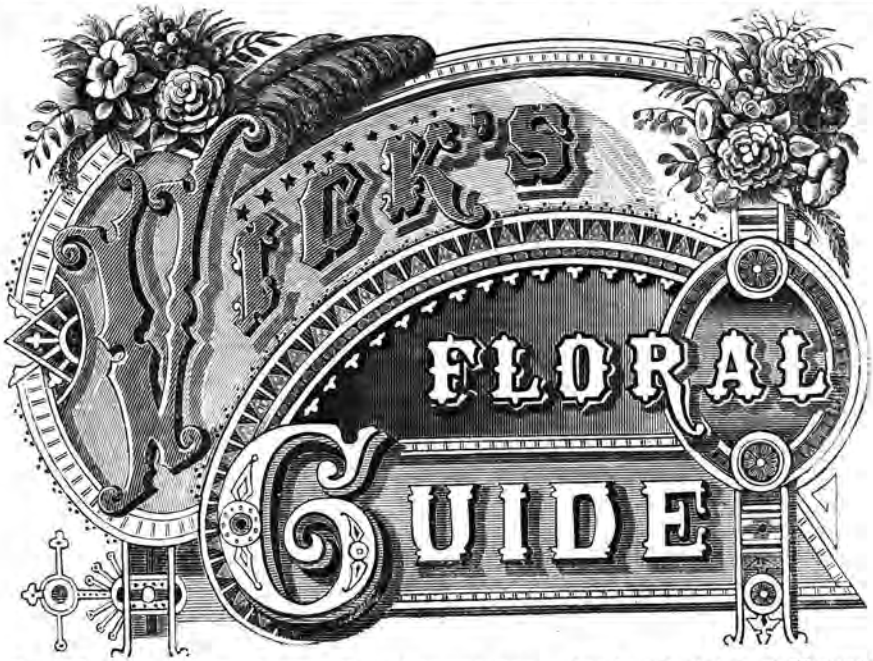

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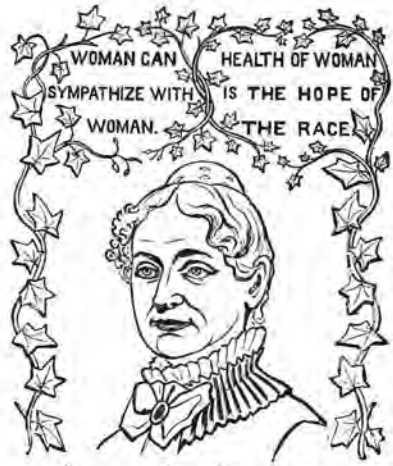

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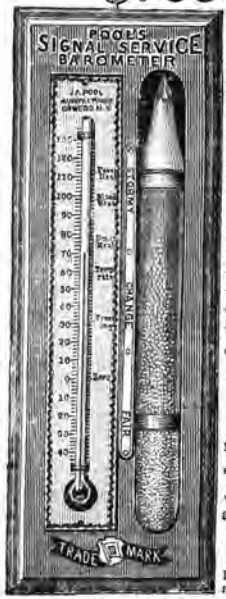

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1883

VOLUME LVI.

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A Serial Story of Boy Life in Great Britain, by . . . William Black.
A Serial Story of New England Life, by . . Harriet Beecher Stowe.
A Serial Story for Girls, by . . . . . Harriet Prescott Spofford.
A Serial Story of Southern Life, by . . . . . Marie B. Williams.
Stories of Old-Time Poor-Houses, by . . . . . J. D. Chaplin.
Tales of the Old Dutch Farmers of New York, by Eugene M. Prince.

Illustrated Travel and Adventure.

A Serial Story of Adventure, by . . . . . C. A. Stephens.
Life in an Irish Fishing Village, by . . . . . Julian Hawthorne.
Tales of Old Ships and Sailors, by . . . . . Capt. F. Luce.
Old Times on the Missouri, by . . . . . A Missourian.
After the Mindanao Pirates in a Dutch Gun-Boat, by . . . Lieut. P. F. Grinnell.
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Yankee Drolleries at Old-Time Fairs and Shows, by . . . . James Parton.
Stories of Old-Time Quack Doctors and their Remedies, by . . Edgar Knowles.
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Victor Hugo at Home. A chatty description of the home life of the great poet, by his Private Secretary, ... Richard Lesclide.
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